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THE THEORY OF VISION; OR, VISUAL LANGUAGE,

SHEWING

The Immediate PRESENCE and
PROVIDENCE of a DEITY,

VINDICATED *and* EXPLAINED.

By the AUTHOR of
ALCIPHRON, *or, The* MINUTE PHILOSOPHER.

Acts xvii. 28.

In Him we live, and move, and have our being.

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PREFACE.

BY THE EDITOR.

"Of Engliſh Philoſophers of the very higheſt note," Sir William Hamilton has obſerved, "(ſtrange to ſay!) there are now actually lying unknown to their Editors, Biographers, and fellow-Metaphyſicians, publiſhed treatiſes of the higheſt intereſt and importance [as of Cudworth, Berkeley, Collins, &c.]." To this claſs belongs the preſent work, which I think it at once a duty and a pleaſure to reſcue from the neglect into which it has fallen. Its ſubſtance was inſerted in "*The Daily Poſt-Boy*," of September the 9th, 1732. The next year it was reprinted in a ſeparate form; but it has not been included in any of Berkeley's collected works, nor had it been noticed by modern Philoſophers till Sir William Hamilton called attention to it. I ſhould except a paſſing alluſion in a note by Sir James Mackintoſh to his critique on the Earl of Shafteſbury. (See *Diſſertation on the Progreſs of Ethical Philoſophy.*)

By way of introduction to this Treatiſe, it will be well to draw attention to the queſtions it propoſes to diſcuſs; namely, (1) *What* do we know by our ſenſes? (2) Which of our perceptions are ſimple and primary, which acquired?

In reply to the firſt queſtion, Berkeley ſays, we know ideas, and theſe only. The greater number of the Philoſophers of the preſent day would anſwer, we know external things (the *non-ego*), as preſent to ourſelves (the *ego*), taking cognizance of them. I have given in my notes their reaſons for holding a different opinion from our author; but it may be well to notice the moſt important of the different theories of perception, in order to ſhow by what ſteps Berkeley was led to his opinion. The whole ſubject has been long veiled in obſcurity by the ſpeculations that Philoſophers have ſpun around it. Inſtead of adopting an Inductive Method of treating it, and aſcertaining the facts before they diſcuſſed the principles that operated in producing them, they began at once to ſpeculate on the problem, how *can* mind take cognizance of matter? They thus cut themſelves from their moorings, and ſailed without compaſs over the ſea of thought; the reſult has been, that they have ſuffered many toſſings of doubt, attended with many fatal conſequences, without attaining the object ſought. The only ſafe courſe, is to begin by interrogating experience as to the nature of the information received through the ſenſes, appealing to ſelf-conſciouſneſs as a witneſs; for "we can know nothing *à priori* of what is poſſible or impoſſible to mind; and it is only by obſervation and by generalization *à poſteriori* that we can hope to obtain any inſight into the queſtion." Thoſe who have diſregarded this principle may have elaborated many ingenious theories; they may have ſtrengthened their minds by the exerciſe, but the power they have acquired, not being rightly directed, has proved more unproductive of good than weakneſs itſelf. A preparation of the ground will be futile unleſs we caſt into it the germ-containing ſeeds. It is true the ſons in the fable were enriched by their father's artifice, although they found no gold, ſince the ſoil was made more fertile as they digged in ſearch of the treaſure; but there would have been no good reſult had the vineyard been unplanted, its fertility would have ſerved only to make the growth of the rank weeds more rapid. So with the mind of man. It is well that his powers ſhould be cultivated, but energizing will lead only to the growth of a larger number of falſe hypotheſes if ſeed-facts be not ſupplied.

Philoſophers have been greatly divided as to the nature of the *object* of perception. The Preſentationiſts have maintained that there is but one object, and that immediate. While holding, however, a *unity* of object, they have differed as to its quality : ſome thinking it to be a phaſe of the mind itſelf, others regarding it as in, but not of, the mind, while a third claſs hold it to be extra-mental. The Repreſentationiſts, on the other hand, tell us that there are two objects, the one immediate and repreſentative, the other real. Let us trace theſe ſeveral opinions.

Plato ſeems to have held that the mind contains certain εἴδωλα, or repreſentative forms, called out of latency by external things. There are reaſons for believing that Ariſtotle taught a much juſter doctrine than moſt of the ancient Philoſophers. But it was not ſo with his followers. Moſt of the Peripatetics held that the mind receives impreſſions from the ſenſible forms ſent off continually by matter, in the ſame way that wax receives the image from the ſeal impreſſed upon it. Democritus and Epicurus thought that ſhadowy films were tranſmitted from the objects of nature to ourſelves. Empedocles, ſome of the Platoniſts, the Stoics, Euclid, Galen, and others, more wildly maintained that the mind ſallied out to things external. As men became more trained to ſcientific reſearch, theſe cruder notions were ſet aſide. Philoſophers appealed to Divine agency to affect the union of matter and mind, and to explain the formation of knowledge. Hence aroſe the theory of occaſional cauſes of the Carteſians. Malebranche thought that as the Divine Being has the attribute of ubiquity, we ſee all things in Him, and by his intervention the immaterial mind of man perceives the material world. Arrived at this point, ſince our ideas come from God and not from matter, it was eaſy for Spinoza to originate a ſyſtem of Pantheiſm, regarding the forms of extenſion and properties of thought as attributes of the Abſolute, in which ſubject and object were combined. Deſcartes had ſtarted with ſelf-conſciouſneſs as the baſis of knowledge, and from this he deduced the exiſtence of a Divine being. Another fundamental notion with him was, that all our knowledge comes to us through ideas, which cannot be produced by phyſical ſubſtance, but muſt be inwrought by God. How then could he verify the reality of things? He was obliged to have recourſe to *Innate Ideas*, which he ſuppoſed to repreſent true, immutable, and eternal eſſences. The ſpirit of Bacon's Philoſophy was utterly oppoſed to this *à priori* baſis of knowledge.

Accordingly, his diſciple, Hobbes, made *ſenſation* the only medium of truth and thought, and held that it operates by the agitation of our internal organiſation. As we know only the material, he concluded that this is the only reality.

Locke recogniſed two ſources of knowledge, ſenſation and reflection. He oppoſed the doctrine of Innate Ideas, and held that ſenſation is the primary ſource of information; but inſtead of limiting us to this, as Hobbes had done, he admits that other ideas are evolved by reflecting upon ſenſe-ideas. But having diſpenſed with Innate Ideas, how does Locke derive his ideas? Inſtead of making the knowing and the known of the ſame nature, he unites the latter with the former by means of a repreſentative agent, whether material or immaterial is hardly clear from his works. Thoſe of theſe ideas which repreſent ſecondary qualities have no likeneſs to theſe qualities, but thoſe which repreſent *primary* qualities, as ſolidity, extenſion, motion and reſt, number and figure, are *reſemblances* of them. As the ſecondary qualities are known only as external ſources of internal ſenſations, they neceſſitate no material ſubſtratum, but it is not ſo with the other ideas, for they are *likeneſſes of external things*.

But, as we elſewhere ſhow, we have no voucher for this aſſertion, ſince we cannot compare the copies with the original to aſcertain their reſemblance. This Berkeley clearly ſaw, and taking Locke's principle, that theſe ideas are the only media of knowledge, he proved by logical deduction that there was no evidence that the external world was more than a day-dream. He affirms that we are conſcious only of one ſet of objects, and theſe are the ideas impinged on our minds by the Creator and Guide of our exiſtence.

Two other Idealiſts made their appearance in this country about the ſame time as Berkeley, namely, Arthur Collier, author of "*Clavis Univerſalis*," and John Norris, who wrote the "*Theory of the Ideal World.*"

Idealiſm is the parent of Scepticiſm. Glanville led the way in this direction by his "*Scepſis Scientifica*," and at length, Hume, by the magic wand of his genius, annihilated mind as Berkeley had previouſly deſtroyed matter. While Hume was thus developing a ſyſtem of *Scepticiſm* from *Locke's Repreſentative Theory*, Condillac, in France, was reſolving all our knowledge and faculties into ſenſations, and evolving a ſyſtem of *Materialiſm.* Reid, ſeeing in what Locke's hypotheſis terminated, carefully ſtudied the queſtion, and came to the concluſion that the inſertion of a *tertium quid* between mind and matter was a mere fiction of Philoſophers, at once unſatisfactory and unſafe. He ſtarted what he called the doctrine of "Common Senſe," in which he appears to have held the theory of intuitive realiſtic perception. His ſentiments, however, are by no means clearly ſtated. He confounds the Repreſentative with the Preſentative faculty, and thus gives to the latter much of the ſubjective character belonging to the former.

Leibnitz had oppoſed the Experience theory of Locke, and returned to innate principles. Aſſuming ſtill the dogma that like can only know like, he denied a direct knowledge of the world, and taught that, by a pre-eſtabliſhed harmony, a mental panorama paſſed through the mind of each man, to correſpond with the external phenomena of his exiſtence. Kant ſaw the neceſſity for *à priori* ideas, but in his opinion they were not independent of experience, but were the *forms* impoſed on the matter furniſhed by experience. But this ſuppoſition gave no aſſurance of the exiſtence of matter *per se*, no guarantee that the ſubjective appearances ſhould be like objective realities, ſince we cannot divide the matter and the form. Fichte endeavoured to account for the *non-ego*, which Kant had left unexplained. Inſtead of adopting the conjecture of Leibnitz, he diſcarded the *Deus ex machinâ*, and made the mind the author of its own ideas. Schelling inveſted the outward fact as well as the internal perception with reality, but regarded both merely as manifeſtations of the abſolute, in which he ſunk our individuality. Hegel reſolved the eſſence of being into the co-exiſtence of two oppoſites, and arrived at Abſolute Idealiſm.

This rapid ſketch of the tendencies of thought may ſuffice for my purpoſe. We have ſeen the Repreſentative theory lead to the Idealiſm of Berkeley, the Senſationaliſm of Condillac, the Scepticiſm of Hume. Starting with the principle that mind is oppoſed to matter, and cannot know it directly, Berkeley denied the conſciouſneſs of an external *non-ego*, but allowed that of an internal object different from the mind. Kant refuſed to give a ſeparate exiſtence to objects, independently of mind. Proceeding from this, Fichte denied the exiſtence not only of an external *non-ego* (as Berkeley had done), but of any *non-ego*. I take my ſtand againſt both, and maintain we know the *non-ego*, and know it to be *out-of-ourſelves*. Through ſenſation we become aware of our bodily organs as affected; through perception we learn the exiſtence of ſomething *beyond our organiſm*. By ſight we learn primarily only an *extended* ſurface; by the muſcular ſenſe we find a *reſiſting* ſurface, oppoſing the exerciſe of our wills. By ſelf-conſciouſneſs we know ourſelves as ſeparate exiſtences; by perception we know outward objects, differing from ourſelves. If we thus know things out-of-ourſelves, we muſt have a notion of ſpace; and this I believe to be a connate principle of the mind brought into conſciouſneſs by the preſentation of an external object exiſting in ſpace. All attempts to prove theſe to be *facts* muſt fail; man univerſally has an inward witneſs, and to this alone we appeal for confirmation of theſe truths.*

The queſtion as to the diſtinction between primary and acquired perceptions is ſo fully dwelt on in the notes, that I feel it needleſs to enlarge upon it here.

In concluſion I may ſay, that in treating theſe important points I have generally preſented the views which I thought to be in harmony with the truth in the words of ſtandard writers on the ſubject rather than in my own.

LONDON, *April 12th*, 1860.

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* See Sir William Hamilton's *Discussions on Philosophy*—Article on the *Philosophy of Perception;* Mr. Morell's *History of Modern Philosophy;* Mr. G. H. Lewes's *Biographical History of Philosophy;* Cousin's *Cours de l'Histoire de la Phil. Mod.*

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ERRATA.

✓ P. 14, line 2 *note, for* "employment," *read* "employments."

✓ P. 22, line 11 *note, for* "existed," *read* "exist."

THE

THEORY OF VISION

VINDICATED AND EXPLAINED:

In answer to an Anonymous Writer.

⁂

I.

AN ill ſtate of health, which permits me to apply myſelf but ſeldom and by ſhort intervals to any kind of ſtudies, muſt be my apology, Sir, for not anſwering your letter*[1] ſooner. This would have altogether excuſed me from a controverſy upon points either perſonal or purely ſpeculative, or from entering the liſt with declaimers, whom I leave to the triumph of their own paſſions. And indeed to one of this character, who contradicts himſelf and miſrepreſents me, what anſwer can be made more than to deſire his readers not to take his word for what I ſay, but to uſe their own eyes, read, examine, and judge for themſelves? And to their common ſenſe I appeal. For ſuch a writer, ſuch an anſwer may ſuffice. But argument, I allow, hath a right to be conſidered, and, where it doth not convince, to be oppoſed with reaſon. And being perſuaded that the *Theory of Viſion*, annexed to *The Minute Philoſopher*, affords to thinking men a new and unanſwerable proof of the exiſtence and immediate operation of God, and the conſtant condeſcending care of His Providence, I think myſelf concerned, as well as I am able, to defend and explain it at a time wherein Atheiſm hath made a greater progreſs than ſome are willing to own, or others to believe.

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*[1] [Published in “The London) Daily Post-boy” of September the 9th, 1732; which see in the Appendix]-Author.

II.

[2]HE who conſiders that the preſent avowed enemies of Chriſtianity began their attacks againſt it under the ſpecious pretext of defending the Chriſtian Church and its rights,[3] when he obſerves the ſame men pleading for natural religion, will be tempted to ſuſpect their views, and judge of their ſincerity in one caſe from what they have ſhewed in the other. Certainly the notion of a watchful, active, intelligent, free Spirit, with whom we have to do, and in whom we live and move, and have our being, is not the moſt prevailing in the books and converſation, even of thoſe who are called Deiſts. Beſides, as their ſchemes take effect, we may plainly perceive moral virtue and the religion of nature to decay, and ſee, both from reaſon and experience, that the deſtroying the revealed religion muſt end in Atheiſm or Idolatry. It muſt be owned, many minute philoſophers would not like

[2] Sect 2-8 contain observations upon the growth of Atheism out of English Deism, in the early part of last century. Cf. *Alciphron*, Dial. I. sect 7-9, &c
[3] The allusion is to Matthew Tindal. His *Rights of the Christian Chur* *asserted against the Romish & other Priests* was published in 1706. Cf. p

at preſent to be accounted Atheiſts. But how many, twenty years ago, would have been affronted to be thought Infidels, who would now be much more affronted to be thought Chriſtians! As it would be unjuſt to charge thoſe with Atheiſm who are not really tainted with it; ſo it will be allowed very uncharitable and imprudent, to overlook it in thoſe who are, and ſuffer ſuch men, under ſpecious pretexts, to ſpread their principles, and in the event, to play the ſame game with Natural Religion that they have done with revealed.

III.

IT muſt, without queſtion, ſhock ſome innocent admirers of a certain plauſible pretender to Deiſm and Natural Religion,[4] if a man ſhould ſay, there are ſtrong ſignatures of Atheiſm and Irreligion in every ſenſe, natural as well as revealed, to be found even in that admired writer: and yet, to introduce taſte inſtead of duty, to

[4] Shaftesbury, against whom the Third Dialogue in Alciphron is directed.

make man a neceſſary agent, to deride a future judgment, ſeem to all intents and purpoſes atheiſtical, or ſubverſive of all religion whatſoever. And theſe every attentive reader may plainly diſcover to be his principles; although it be not always eaſy to fix a determinate ſenſe on ſuch a looſe and incoherent writer. There ſeems to be a certain way of writing, whether good or bad, tinſel or ſterling, ſenſe or nonſenſe, which, being ſuited to that ſize of underſtanding that qualifies its owners for the Minute Philoſophy, doth marvellouſly ſtrike and dazzle thoſe ingenious men, who are by this means conducted they know not how, and they know not whither. Doubtleſs that Atheiſt who gilds and inſinuates, and, even while he inſinuates, diſclaims his principles, is the likeſt to ſpread them. What availeth it, in the cauſe of Virtue and Natural Religion, to acknowledge the ſtrongeſt traces of Wiſdom and Power, throughout the ſtructure of the univerſe, if this Wiſdom is not employed to obſerve, nor this Power to recompenſe our actions; if we neither believe ourſelves accountable, nor God our Judge?

IV.

ALL that is ſaid of a vital principle, of order, harmony, and proportion; all that is ſaid of the natural decorum and fitneſs of things; all that is ſaid of taſte and enthuſiaſm, may well conſiſt and be ſupported, without a grain even of Natural Religion, without any notion of laws or duty, any belief of a Lord or Judge, or any religious ſenſe of a God; the contemplation of the mind upon the ideas of beauty, and virtue, and order, and fitneſs, being one thing, and a ſenſe of religion another. So long as we admit no principle of good actions but natural affection, no reward but natural conſequences; ſo long as we apprehend no judgment, harbour no fears, and cheriſh no hopes of a future ſtate, but laugh at all theſe things, with the * Author of the Characteriſtics and thoſe whom he eſteems the liberal and poliſhed part of mankind,† 5 how can we be ſaid to be religious in any ſenſe? Or what is here that an Atheiſt may not find his account in as well as a Theiſt? To what moral purpoſe might not fate or nature ſerve as well as a Deity, on ſuch a ſcheme? And is not this, at bottom, the amount of all thoſe fair pretences? ‡

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* Earl of Shaftesbury, b. 1671, d. 1713.—Ed.

† [Characteristics, vol. 3; Miscel. 2, ch. 2]-Author

5.‡ "The fortune of the Characteristics says Sir J. Mackintosh, has been singular. For a time the work was admired more undistinguishingly than its literary character warrants. In the succeeding period it was justly criticised, but too severely condemned. Of late, more unjustly than in either of the former cases, it has been generally neglected. It seemed to have the power of changing the temper of its critics. *It provoked the amiable Berkeley to a harshness equally unwonted and unwarranted;* while it softened the rugged Warburton so far as to dispose the fierce, yet not altogether ungenerous, polemic to praise an enemy in the very heat of conflict."—Mackintosh, Dissertation on the Progress of *Ethical Philosophy*, sect. v.—Ed.

V.

CERTAINLY that Atheiſtical men, who hold no principles of any religion, natural or revealed, are an increaſing number, and this too many people of no deſpicable rank, hath long ſince been expreſſly*[6] acknowledged by one who will be allowed a proper judge, even this ſame plauſible pretender himſelf to Deiſm and enthuſiaſm. But if any well meaning perſons, deluded by artful writers in the Minute Philoſophy, or wanting the opportunity of any unreſerved converſation with ſome ingenious men of that ſect, ſhould think that *Lyſicles*[7] hath overſhot the mark, and miſrepreſented their principles; to be ſatisfied of the contrary, they need only caſt an eye on the *Philoſophical Diſſertation upon Death*,[8] lately publiſhed by a Minute Philoſopher. Perhaps ſome man of leiſure may think it worth while to trace the progreſs and unfolding of their prin-

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*[6] [Moralists, part II. sect. III.]—Author.

ne of the interlocutors in Alciphron, on the free-thinking side.

Philosophical Dissertation on Death, composed for the Consolation of the Unhapp

y a Friend to Truth. London. 1732. This work is attributed to A. Radicati, Count de

sserano, & the translation to John (Thomas?) Morgan. The fear of death, as well as the

ral feelings & judgments of men, are referred in this Essay to habit & education; &

[illegible] is vindicated as well as the law ciples, down from the writer in Defenſe of the *Rights of the Chriſtian Church,*[9] to this plain dealer, the admirable author upon "*Death.*" During which period of time, I think one may obſerve a laid deſign, gradually to undermine the belief of the Divine Attributes and Natural Religion; which ſcheme runs parallel with their gradual, covert, inſincere proceedings, in reſpect of the Goſpel.

VI.

THAT Atheiſtical principles have taken deeper root, and are farther ſpread, than moſt people are apt to imagine, will be plain to whoever conſiders, that Pantheiſm, Materialiſm, Fataliſm, are nothing but Atheiſm a little diſguiſed; that the notions of *Hobbes*, *Spinosa*, *Leibnitz*,[10] and *Bayle* are reliſhed and applauded; that as they who deny the Freedom and Immortality of the ſoul in effect deny its being, even ſo they do, as to all moral effects and natural

Rights of the Christian Church asserted against the Romish & other Priests who
dependent power over it. With a Preface concerning the Government of the Church
nd as by Law established. London, 1706. The author, as is well known, was Matth
; one of the English deists. The work called forth a host of controversial pamphlets.
led, however, by Le Clerc & others as simply an attack on Sacerdotalism. In 1731, Tind
shed Christianity as old as the Creation: or the Gospel a republication of the Relig

religion, deny the being of God, who deny Him to be an obſerver, judge, and rewarder of human actions; that the courſe of arguing purſued by infidels leads to Atheiſm as well as infidelity.

[An inſtance of this may be ſeen in the proceeding of the Author of a book,// intituled, *A Diſcourſe of Free-thinking occaſioned by the Riſe and Growth of a Sect called Free-thinkers*, who, having inſinuated his Infidelity from men's various pretences and opinions concerning revealed religion, in like manner appears to inſinuate his Atheiſm from the differing notions of men concerning the nature and attributes of God, particularly from the opinion of our knowing God by analogy, as it hath been miſunderſtood and miſinterpreted by ſome of late years. Such is the ill effect of untoward defences and explanations of our Faith; and ſuch advantage do incautious friends give its enemies. If there be any modern well meaning writer, who (perhaps from not having conſidered the 5th Book of *Euclid*)

ably on the ground of his Necessarianism, more or less developed in his Theodicée
his Correspondence with Dr Samuel Clarke.
thony Collins, whose Discourse appeared in 1713, & was the occasion of much con
ersy. See in particular Remarks upon a late Discourse of Free-thinking: in a
er to T.H. D.D. (Dr Hare, afterwards Bishop of Chichester) by Phileleutherus Lipsiensis (
) London 1713. It was in 1713 that the Essays against the Free-thinkers, at

writes much of analogy without underſtanding it, and thereby hath ſlipped his foot into this ſnare, I wiſh him to ſlip it back again, and inſtead of cauſing ſcandal to good men, and triumph to Atheiſts, diſcreetly explain away his firſt ſenſe, and return to ſpeak of God and his attributes in the ſtyle of other Chriſtians, allowing that knowledge and wiſdom do, in the proper ſenſe of the words, belong to God, and that we have ſome notion, though infinitely inadequate, of theſe divine attributes, yet ſtill more than a man blind from his birth can have of ſight and colours.[12]]

But to return, if I ſee it in their writings, if they own it in their converſation, if their ideas imply it, if their ends are not anſwered but by ſuppoſing it, if their leading author[13] hath pretended to demonſtrate Atheiſm, but thought fit to conceal his demonſtration from the public; if this was known in their clubs, and yet that author was neverthelefs followed, and repreſented to the world as a believer of Natural Religion; if theſe things

Alciphron, Dialogue IV. sect. 16–22, in which the nature of man's notion of God, &
ficiency of the analogical hypothesis to account for our theological knowled
ssed. This alleged heresy is defended with acuteness & learning in the Divine
of Bishop Browne, which appeared in 1733, almost contemporaneously with
Besides Berkeley & Browne, both Irish bishops, & opposed on this question of an analog
ledge of Things Divine & Supernatural, his archbishop of Dublin & three Eng

interpreting Scripture, in what relates to the Nature of the Deity, edited with notes by Archbishop
Whately; Bp Law's Notes on Archbp: King's Essay on the Origin of Evil; Bp. Copleston's Inquiry into
the Doctrines of Necessity & Predestination; & Bp. Hampden's Bampton Lectures on The Scholastic
Philosophy in its relation to Christian Theology; to which may be added Dr. Mansel's well-known Bampton

are ſo (and I know them to be ſo), ſurely what the favourers of their ſchemes would palliate, it is the duty of others to diſplay and refute.

VII.

AND although the characters of Divinity are large and legible, throughout the whole creation, to men of plain ſenſe and common underſtanding, yet it muſt be conſidered that we have other adverſaries to oppoſe, other proſelytes to make, men prejudiced to falſe ſyſtems and proof againſt vulgar arguments, who muſt be dealt with on a different footing. Conceited, metaphyſical, diſputing men muſt be paid in another coin; we muſt ſhew that truth and reaſon in all ſhapes are equally againſt them, except we reſolve to give them up, what they are very fond of being thought to engroſs, all pretenſions to philoſophy, ſcience, and ſpeculation.

VIII.

MEANWHILE thus much is evident; thoſe good men who ſhall not care to employ their thoughts on this *Theory of Viſion*, have no reaſon to find fault. They are juſt where they were, being left in full poſſeſſion of all other arguments for a God, none of which are weakened by this. And for thoſe who ſhall be at the pains to examine and conſider this ſubject, it is hoped they may be pleaſed to find, in an age wherein ſo many ſchemes of Atheiſm are reſtored or invented, a new argument of a ſingular nature in proof of the immediate care and providence of a God, preſent to our minds, and directing our actions. As theſe conſiderations convince me, that I cannot employ myſelf more uſefully than in contributing to awaken and poſſeſs men with a thorough ſenſe of the Deity inſpecting, concerning, and intereſting itſelf in human actions and affairs: ſo, I hope, it will not be diſagreeable to you, that in order to this, I make my appeal to Reaſon, from your remarks upon what I have written concerning Viſion; ſince men who differ in the means, may yet agree in the end, and in the ſame candour and love of truth.

IX.

14 BY a ſenſible object* I underſtand that which is properly perceived by ſenſe.

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* It is necessary to discriminate between the various employmentsof the terms *Object* and *Subject*. The word *subject* is used, in ordinary conversation, to denote the matter in hand or the thing under discussion; as when we speak of the *subject* of a discourse, or the *subject* of a surgical operation. In Logic it is that, with regard to which anything is affirmed or denied.

The word *object* is employed to designate that towards which our efforts or desires are directed; as when we talk of the pursuit of wealth or pleasure as *objects* of men's lives. It is also used to point out and express whatever may be presented to the senses or thoughts of men.

It will be seen, that the word *subject* is employed

Sect 9–13 contain Berkeley's explanation of the term sensible object, i.e. sense-idea
nsation; & enforce the, with him, essential distinction between perceivable by
nsations & their unperceivable cause.

Things properly perceived by ſenſe are immediately perceived.[15] Beſides things pro-

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in a sense somewhat analogous to that for which *object* likewise stands, but the word trespasses beyond its province when it stands for the *materia circa quam*.

In Philosophical phraseology, the term *object* denotes, 1, something absolutely existing independent of mind; 2, something relative and considered in connexion with mind. With the older philosophers the latter meaning prevailed; the *ens objectivum* denoting that which is present to mind, as an accidental object of thought, in contradistinction to the same thing in its real and essential nature.

Des Cartes meant by *objective reality* the conformity of the representing idea with the *actual reality* which it presented to cognition. The Representationists supposed a double object, one internal and relative, the other external and causative of the former: "Il est très vrai," says Arnauld, "en ce sens, que non seulement au regard des choses matérielles, mais généralement au regard de toutes choses, ce sont nos idées que nous voyons immédiatement, et qui sont l'objet immédiat de notre pensée: ce qui n'empêche pas que nous ne voyons aussi, par ces idées, *l'objet qui contient formellement* ce qui n'est qu' *objectivement* dans l'idée."—*Des Vraies et des Fausses Idées*, ch .VI.

our percepts proper our sensations (or ideas, as Berkeley calls them) w
re conscious of in our actual sense-experience, & not mere representa
h we are induced to believe by suggestion, or by inductive inference fou
e sensations. What is suggested is not an object of sense, but of imagin
imagination ministers to belief.

perly and immediately* perceived, by any ſenſe, there may be alſo other things

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The German Philosophers, Kant and Fichte, used the terms with their present meaning; *object* with them being the knowable, and *subject* that in which knowledge inheres.

I cannot do better than subjoin a quotation from Sir William Hamilton, who has marked this distinction with great skill and precision :—

"In philosophical language, it were to be wished that the word *subject* should be reserved for the *subject of inhesion*—the *materia in qua;* and the term *object* exclusively applied to the *subject of operation*—the *materia circa quam.* If this be not done, the grand distinction of *subjective* and *objective* in philosophy is confounded. But if the employment of *subject* for *object* is to be deprecated, the employment of *object* for purpose or final cause (in the English and French languages) is to be absolutely condemned, as a recent and irrational confusion of notions which should be carefully distinguished."—*Sir W. Hamilton, Reid's Works*, p. 97 note, and App. note B. And, *Discussions of Philosophy*, article 1, note to p. 5. —Ed.

* The Philosophers who have treated of Perception may be classed under two heads (1), those who hold the opinion that there is but *one object*

ſuggeſted to the mind by means of thoſe proper and immediate objects. Which

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concerned in the operation, and that this object is *immediately* perceived; (2) those who maintain that the object of which we are directly conscious is not absolute and simple, but is representative of something else, beyond the sphere of direct cognition: with them the *ultimate object* of cognition is knowable only through the medium of something intervening between mind and matter, and thus they recognize *two objects*, one *immediate* and representative, the other *mediate* and actual. Those who are agreed as to there being but *one* object, and that immediate, greatly differ in their notions of this single object; some believe it to be *material*, others say that it is *ideal.* To the latter class Berkeley belongs; who, while he has greatly served the cause of truth, by exposing the fallacy of the representative theory, seems to have fallen into the more serious error of denying to us the ability to know anything but mind.—(See foot note to note C, appended to *Reid's Works* by Sir William Hamilton.)

It is necessary to remark, that while the objects of perception are *immediate* and presentative, there are other objects of thought which are not so; namely, those that are known as not existing *now* and *here.* Of past and future objects and things ſo ſuggeſted are not objects of that ſenſe, being in truth only objects of the imagination, and originally belonging to ſome other ſenſe or faculty. Thus ſounds are the proper object of hearing; being properly and immediately perceived by that, and by no other ſenſe. But, by the

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events, whether physical or mental, we can have no knowledge, but through present representative intellectual phenomena mirrored forth by *Imagination*, which here stands for the whole Representative faculty, which re-exhibits past objects and enables us to regard them purely by themselves, or furnishes materials to *Fancy* and *Conception.*

By not observing this distinction between *mediate* and *immediate*, *presentative* and *representative* objects, Reid has fallen into error in interpreting the opinions of other psychologists and in setting forth his own Metaphysical doctrines.

Berkeley clearly discriminates between our original percepts and the images of them which are painted by Imagination. "The ideas imprinted on the senses by the Author of Nature," he says, "are called real things; and those excited in the imagination, being less regular, vivid, and mediation of ſounds or words, all other things may be ſuggeſted to the mind, and yet things ſo ſuggeſted are not thought the object of hearing.

X.

THE peculiar objects of each ſenſe, although they are truly or ſtrictly

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constant, are more properly termed ideas, or images of things, which they copy and represent." We have here an important distinction, but one which Reid, not being able to grasp, considers an inaccuracy. "When I imagine a lion," he tells us, "or an elephant, the lion or elephant is the object imagined. The act of the mind, in conceiving that object, is the notion, the conception, or imagination of the object. If besides the object, and the act of the mind about it, there is something called the idea of the object, I know not what it is." *Had he known*, he would have withheld some needless strictures.—See Berkeley, *Principles*, sect. 33 ; *Reid's Works*, p. 292, and notes thereupon (B. and H.) by Sir W. Hamilton ; also Samuel Bailey's "*Letters on the Philosophy of the Human Mind*," Letter xxi—1st series.—Ed.

perceived by that ſenſe alone, may yet be ſuggeſted to the imagination by ſome other ſenſe. The objects therefore of all the ſenſes may become objects of Imagination, which faculty repreſents all ſenſible things. A colour therefore, which is truly perceived by ſight alone, may neverthelеſs upon hearing the words blue or red be apprehended by the Imagination. It is in a primary and peculiar manner the object of ſight; in a ſecondary manner it is the object of Imagination: but cannot properly be ſuppoſed the object of hearing.

XI.

THE objects of ſenſe, being things immediately perceived, are otherwiſe called *ideas*.* The cauſe of theſe *ideas*, or

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* The word *idea* is scarcely capable of fixed and accurate definition. Its chameleon nature, its ever-varying hue, presents fresh phases of thought. as we trace its use and meaning, in the history of philosophy.

It took its rise in a false method of scientific the power of producing them, is not the object of ſenſe, not being itſelf perceived,

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investigation, which attempted to explain *how* we know, before it had accurately determined *what* we know. Men predicated certain things about matter, *per se*, and made these assertions the basis of their theories of perception, and thus blinded their minds to the fact, which forms the only legitimate starting point in tracing the connexion of mind and matter; namely, that we can know nothing about absolute and isolated material existences, and can only speak of their observed relations to mind.

Of the term *idea*, Dean Trench remarks, "There is indeed no other word in the whole compass of English, which perhaps is so seldom used with any tolerable correctness." Without stopping to consider its lax employment in general phraseology, I will confine my remarks to its meaning in the vocabulary of philosophy. Plato employed ἰδέα and εἶδος to designate the *eternal exemplary* or *typical models* of things, according to which *archetypes* the Deity fashioned his created worlds. In this sense of the word Milton sublimely conceives the Deity contemplating nature:

> "How it showed,
> Answering his great *idea*."

but only inferred by reaſon from its effects, to wit, thoſe objects or ideas which are

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These ideas Plato considered as the only proper objects of science, since they ever remained the same, while the world was an ever shifting scene. Norris opines the same thing, in his *Essay towards the Theory of the Ideal or Intelligible World* (published in 1704). "If material things were perceived immediately by themselves, there could be no physical *science:* for science is concerning things necessary and immutable." Aristotle bids us study these ideas in created things, in which they existed as inseparable forms.

In order to explain the communication between the physical and material, and the mental and immaterial, men had recourse to many curious conjectures. They affirmed that this intercourse cannot be direct. (1) Because the material and the spiritual are of opposite natures, and are separated, as some termed it, by the whole diameter of being. (2) Having observed that bodies acted on each other, through impulse, only when in contact or connected by something interposed, they concluded that an analogous process must take place for mind to receive impressions from matter.

Democritus and Epicurus thought that εἴδωλα, ἀπόῤῥοιαι, *imagines*, *simulacra rerum*, &c., were continually being sent off from objects, and were propagated to the perceptive faculties. Des Cartes perceived by ſenſe. From our ideas of ſenſe the inference of reaſon is good to

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rejected the grosser form of representation, held by the schoolmen; but, believing that mind and body are essentially opposed, he employed a modification of the theory of *species*, *image*, *phantasm*. He substituted *ideas* for these terms, and held that they are the *occasions* of perception. He gives the following definition in his *Méditations*.

"*Ideæ* nomine intelligo cujuslibet cogitationis formam illam, per cujus *immediatam* perceptionem ipsius ejusdem cogitationis conscius sum.". . . . "*Per realitatem objectivam ideæ* intelligo entitatem rei representatæ per ideam quatenus est in idea, eodemque modo dici potest *perfectio objectiva*, *artificium objectivum*, &c."

It will be unnecessary to trace the usage of this word through the various schools who have adopted it, since this has been so admirably done by Sir William Hamilton in his notes appended to *Reid's Works*, and in his "*Discussions of Philosophy;*" suffice it to say, that it gave rise to Malebranche's theory of the vision of all things in God, the doctrine of pre-established harmony of Leibnitz, the phenomena of Kant, and the external states of Brown, and has paved the way for Materialism and Idealism.

Some have regarded *ideas* as something distinct

Power, Cauſe, Agent. But we may not therefore infer that our Ideas are like unto

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from the mind, while others view them as modifications of the percipient mind; according to their source or formation, they are held to be *adventitious*, *factitious*, or *innate;* as to their purpose, they are *absolute*, or *non-representative*, or else *relative* and *representative.* They are viewed in the latter light by those who believe in the existence of a material substratum, while the absolute Idealists consider them to be original presentments. Berkeley has greatly contributed to the cause of truth by pointing out the fallacy of the arguments of the Representationists, whose tenets will be discussed in a future note. As to *pure* Idealism, Hume has pronounced the arguments of Berkeley to be irrefutable, and has followed them up by an attempt to disprove the existence of matter.

Even those who do not accept Berkeley's notions as correct, tell us they cannot be shown to be inconclusive; but surely it is enough to object to the point with which he starts and which he takes for granted, namely, that we perceive only *ideas.* We reply that we have a *direct knowledge* of matter, and the *onus probandi* rests with him, and he can take no further step till he can prove that we *cannot* have this.

He acknowledges, as we have shown before, that this Power, Cauſe, or active being. On the contrary, it ſeems evident that an Idea

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there are two classes of ideas: the first class passing as *real things*, and the second, which are *copies* of these presented by the reproductive faculty, he allows are more appropriately called ideas: but still he persists in entitling the former class also by that name, and taking advantage of this application of the same title to very different things, he asserts that they exist only in a perceiving mind. We allow that this is true of the second class, for we have the testimony of consciousness to the fact, and he takes it for granted that it is true of the first class also, ("and who can doubt it since they bear the same name?") which consciousness contradicts.

Besides the *ideas* of perception, we must notice in passing the *ideas* of Logicians, or those abstract notions which we obtain by a process of generalization. To prevent confusion it would be well if these general terms could be named *concepts*. The Arabians have supplied us with a sub-division of concepts into first and second notions, the former being the concept of a thing *as it exists in itself;* the latter, the concept, not of the object as it is in reality, but of the *mode under which it is thought in the mind.*—Sir William Hamilton, *Discussions*, p. 137.

can be only like another Idea, and that in our Ideas or immediate objects of ſenſe,

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Logic has to deal with second notions, as Thomson remarks, "A logician has nothing to do with ascertaining whether a horse, or a ship, or a tree exists, but whether one of these things can be regarded as a genus or species, whether it can be called a subject or attribute." (*Outline of the Laws of Thought*, 2nd ed., p. 39, et seq.) Some momentous questions have been raised concerning notions, or abstract ideas; it has been asked whether they have an *à priori* existence in our minds, or are evolved, *à posteriori*, by the exercise of abstraction on the data of experience. Arising out of this, there was a long and bitter dispute on Ontological speculations, starting with the question "Are *genera* and *species* really-existing *things?*" The Nominalists and Conceptualists probed the fundamental truths of the mind. "The Nominalists declared that nothing existed except things and names of things." "The Conceptualists assigned to universals an existence independent of single objects." Nominalism has been embraced by Hobbes, Berkeley, Hume, Adam Smith, Campbell, and Stewart; Conceptualism, by Locke, Reid, and Brown.—See *Thomson's Outlines of the Laws of Thought*, p. 110; Victor Cousin, *Cours de l'Histoire de la Philosophie*, leçon 22; Sir William Hamilton, *Lectures on Metaphysics*, lecture XXXV.—Ed.

there is nothing of Power, Cauſality, or Agency included.[16]

XII.

HENCE it follows, that the Power or Cauſe of Ideas is not an object of ſenſe, but of Reaſon. Our knowledge of the Cauſe is meaſured by the Effect; of the Power, by our Idea. To the abſolute nature, therefore, of outward Cauſes or Powers, we have nothing to ſay; they are no objects of our ſenſe or perception. Whenever, therefore, the appellation of ſenſible *object* is uſed in a determined intelligible ſenſe, it is not applied to ſignify the abſolutely exiſting outward Cauſe or Power, but the Ideas[17] themſelves produced thereby.

XIII.

IDEAS, which are obſerved to be connected together, are vulgarly conſidered under the relation of cauſe and effect,

Cf. Principles of Human Knowledge, sect. 25-28.

i.e. sensations.

whereas, in ſtrict and philoſophic truth, they are only related as the ſign to the thing ſignified.[18] For we know our Ideas; and therefore know that one Idea cannot be the cauſe of another. We know that our Ideas of ſenſe are not the cauſe of themſelves. We know alſo that we do not cauſe them. Hence we know they muſt have ſome other efficient cauſe diſtinct from them and us.[19]

XIV.

IN treating of Viſion, it was my purpoſe to conſider the Effects and Appearances, the objects[20] perceived by my ſenſes, the Ideas[21] of ſight as connected with thoſe of Touch; to inquire how one Idea comes to ſuggeſt another belonging to a different ſenſe, how things viſible ſuggeſt things tangible, how preſent things ſuggeſt things more remote and future, whether by likeneſs, by neceſſary connexion, by Geometrical Inference, or by Arbitrary Inſtitution.[22]

he whole theory of (physical) causation, as developed by Hume, Dr. Tho: Brow
J. S. Mill, & other recent theorists on the methods of positive science, is involve
his sentence. Cf. Principles of &c, sect 25, 26, 51-53, 65, 66, &c
is is Berkeley's explanation of our notions belief of externality. The external
ld is essentially dependent on mind, but actually independent of each fini
r efficient cause, & thus impersonal. Cf. Principles of &c, sect 56, 57, &c.

XV.

IT hath indeed been a prevailing opinion and undoubted Principle among Mathematicians and Philoſophers, that there were certain Ideas common to both ſenſes : whence aroſe the diſtinction of primary and ſecondary qualities.* But I think it hath been demonſtrated that there is no ſuch thing as a common object, as an Idea, or kind of Idea perceived both by ſight and touch.*23.

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* Much importance has been attached to this classification of the qualities of bodies, and it has played an important part in discussions on the existence of a material world. The distinction was recognised, in part, at a much earlier period than has been generally supposed. Democritus noticed that certain qualities of bodies, such as sweetness, coldness, &c., have only a relative existence ; and Aristotle divided *sensibles* into *common* and *proper*. Des Cartes discriminated between these counter classes, and Malebranche applied the term *idée* to phenomena, as viewed *objectively*, and *sentiment* to their subjective influence. "Le sentiment est une modification de notre âme, et c'est Dieu qui la cause en nous. . . Pour l'idée qui se trouve jointe avec le sentiment, elle est en Dieu, et nous la voyons, parce qu'il lui plaît de nous la découvrir."—*Recherche*, L. III. p. ii. c. 6.

Locke considers those qualities as primary

shed 24 years previously. [21] i.e. the sensible objects (called ideas by
ch we are conscious, as distinguished from their causes, of which we are no
t be, immediately percipient. This corresponds to the distinction between
& mediate or suggested perception. [22] The doctrine of visual suggest
synthesis of arbitrary association, is the essence of the New Theory of Vision,
ded upon the phenomenal heterogeneity of the visible & tangible worlds.

"that are utterly inseparable from the body in whatsoever state it be. . . viz. solidity, extension, figure, motion, or rest and number." Secondary qualities he tells us are "such qualities, which in truth are nothing in the objects themselves, but powers to produce various sensations in us by their primary qualities. . . . as colour, sounds, tastes, &c., these I call secondary qualities. The *ideas* of primary qualities of bodies are *resemblances* of them, and their patterns do really exist in the bodies themselves; but the ideas produced in us by these secondary qualities, have no resemblance of them at all."—*Essay on the Understanding*, book ii. ch. 8. sect. 9, 10, 15.

Reid remarks on this point:—"Our senses give us a direct and distinct notion of the primary qualities, and inform us *what they are in themselves.* But of the secondary qualities our senses give us only a relative and obscure notion. They inform us only that they are qualities that affect us in a certain manner—that is, produce in us a sensation; but as to what they are in themselves our senses

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23 *[Theory of Vision, sect. cxxvii. et seq.]—Author.

XVI.

IN order to treat with due exactneſs on the nature of Viſion, it is neceſſary in

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leave us in the dark." *On the Intellectual Powers*, essay ii. chap. xvii.

Stewart says :—" I distinguish Extension and Figure by the title of *Mathematical Affections* of matter ; restricting the phrase *Primary Qualities*, to Hardness and Softness, Roughness and Smoothness, and other properties of the same description. The line which I would draw between *Primary* and *Secondary* Qualities is this, that the former necessarily involve the notion of *Extension*, and consequently of *externality* or *outness ;* whereas the latter are only conceived as unknown causes of known sensations ; and *when first apprehended by the mind*, do not imply the existence of anything locally distinct from the subjects of its own consciousness.—*Phil. Essays*, Works ; vol. v. pp. 116, 117.

Brown has objected to these views, and thus sums up :—" There is no reason to suppose that the knowledge is, in one case, more direct than in the other. In both, it is the effect of the presence of an external cause, and in both it must be *relative only*, to adopt Mr. Reid's phrase, to that particular cause which produced the firſt place accurately to conſider our own Ideas:[24] to diſtinguiſh where there is a difference: to call things by their right

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it; the knowledge of which cause, in the case of *extension* as much as in the case of *fragrance*, is nothing more than the knowledge that there is, *without* us, something which is not our mind itself, but which exists, as we cannot but believe, permanently, and independently of our mind, and produces, according to its own varieties, in relation to our corporeal frame, at one time that affection of the mind which we denominate the perception of extension; at another time that different affection of the mind which we denominate the perception of fragrance." I would only remark upon this that the use of perception in the last case is not very felicitous, sensation being there meant. Notwithstanding these opinions, Brown would admit primary and secondary qualities, because he considers the former to be necessary to our notion of matter.—See *Lectures on the Philosophy of the Human Mind*, vol. I. lecture XXV.

After giving an historical digest and survey of this division of the qualities of bodies, Sir W. Hamilton proposes a purer analysis. "He distinguishes the *Primary* qualities as *objective*, not *subjective;* as *percepts-proper*, not sensations proper;

In other words, a theory of vision implies preliminary reflection upon the
cts of which we are conscious in the various senses—the sensations g
in each sense.

names: to define terms, and not confound ourſelves and others by their ambiguous uſe; the want or neglect whereof hath ſo

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the *secundo-primary*, as *subjective*, not objective cognitions, as *sensations proper*, not percepts proper." "Under the primary," it is added, "we apprehend modes of the non-ego; under the secundo-primary we apprehend modes both of the ego and of the non-ego; under the secondary we apprehend modes of the ego and infer modes of the non-ego." Moreover; "the primary are known under the condition of sensations; the secundo-primary, in and along with sensations; the secondary in consequence of sensations." Mr. Herbert Spencer adopts these specifications with but little variation, and agrees with Hamilton in asserting that the *object* is *active* and the *subject passive*, in the so-called *secondary qualities* or *dynamical attributes*, as they are styled in his nomenclature; while, in the case of the *resistance-attributes, secundo-primary* or *statico-dynamical*, the *subject and object* are *both active;* and, lastly, in reference to the *space attributes*, or *primary qualities*, the mind or *subject* is *active*, the *object* being *passive*.—See *Principles of Psychology*, p. 227 et seq.; Reid's *Works*, note D. sects. 11, 18. I dissent, with considerable diffidence, from the sentiments of these great often produced miſtakes. Hence it is, that men talk as if one Idea was the

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thinkers, but I must confess that their statements seem to me to be wanting in strict accuracy. In considering this question, it is important to bear in mind the distinction between *sensation* and *perception*, and I do not know that I can define them better than in the words of Mr. Bailey. "*Sensation* is an affection felt to be in some part of the body, whether attended or not by a discernment of anything different from or external to the sentient being." "*Perception* is discerning something different from or external to the percipient being, whether attended or not by a bodily sensation."—See *Letters on the Philosophy of the Human Mind*, second series, p. 41. Percepts, then, reveal outward phenomena, sensations make us conscious of bodily affections. Now, since some of the properties of bodies affect the sensational part of our nature, while others act on our perceptive faculties, we may base their classification on this distinction. Moreover, some of these are more properly adjuncts and accidents of matter, while others are essential to our notions of it. But surely we cannot say that one class is subjective and the other objective. As powers or qualities inhering in matter they are all objective, and belong to the non-ego : but, as knowable, theyhave all likewise efficient cauſe of another: hence they miſtake Inferences of Reaſon, for Per-

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a subjective and relative phase. Perceptions may be invariably attended with sensations, but the latter do not form a *tertium quid* between external objects and our minds, as Sir W. Hamilton seems to imply. *Perceptions* are like the sun, which reveals the world around but draws not our attention so much to itself. *Sensations* resemble the moon, which attracts observation to *itself*, and throws but little light on surrounding things.

Dr. Whewell has a different theory on this question. "The most obvious mode," he tells us, "of stating the difference of primary and secondary qualities, as it naturally offers itself to speculative minds, appears to be that employed by Locke, slightly modified. Certain of the qualities of bodies, as their bulk, figure, and motion, are perceived immediately in the bodies themselves. Certain other qualities, as sound, colour, heat, are perceived by means of some medium. Our belief that this is the case is spontaneous and irresistible; and this difference of qualities, immediately and mediately perceived, is the distinction of primary and secondary qualities."—*Philosophy of the Inductive Sciences*, book iv. chap. i. sect. 1. I acknowledge that I do not understand the meaning of this. If the medium is physical, bulk, figure, ceptions of Senſe*: hence they confound the Power reſiding in *ſomewhat external*

&c., are perceived mediately as well as sound, &c. If the medium supposed be mental, I deny its existence altogether.

The right conclusion from these considerations seems to be, that we know no more of the primary qualities *as they are in themselves*, than of the secondary; what we can predicate of them both, is their known relations to mind. Locke's division does therefore not answer his purpose. I would make those qualities primary which are known by the simple act of perception, and reckon those, which are ascertained to us by a process of induction, as secondary.—See Prof. Ferrier's *Institutes of Metaphysic*, Prop. v.; Cousin, *Cours de Philosophie*, Lecture xxi.; Berkeley, *Dialogue between Hylas and Philonous*, Dial. i.; Hume, *Essays*, sect. 12.; M'Cosh, *The Intuitions of the Mind*, p. 145.—Ed.

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* "The idols of the market are the most troublesome of all, those namely which have entwined themselves round the understanding from the associations of words and names. For men imagine that their reason governs words, whilst, in fact, words re-act upon the understanding; and this has rendered philosophy and the sciences sophistical and inactive. . . . Hence the great and solemn

with the proper object of ſenſe, which is in truth no more than our own Idea.

XVII.

WHEN we have well underſtood and conſidered the nature of Viſion,[25] we may, by reaſoning from thence, be better able to collect ſome knowledge of the external, unſeen Cauſe of our Ideas; whether it be one or many, intelligent or unintelligent, active or inert, Body or Spirit; but, in order to underſtand and comprehend this Theory, and diſcover the true principles thereof, we ſhould conſider the likelieſt way is not to attend to unknown ſubſtances, external cauſes, agents or

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disputes of learned men often terminate in controversies about words and names, in regard to which it would be better (imitating the cautions of mathematicians) to proceed more advisedly in the first instance, and to bring such disputes to a regular issue by definitions."—Bacon, *Novum Organum*, book i. Aphorism liv.—Ed.

e. the objects we are actually conscious of in seeing—in themselves, apa
v extreme substances or causes. This purified self-consciousness is B
ndation for his theory of externality in another consciousness than our ou
ntrast to the theory of an unknowable externality, independent of any
d—his philosophy of substances & causes as necessarily Mind, or at lea

powers, nor to reaſon or infer anything about or from things obſcure, unperceived, and altogether unknown.

XVIII.

AS in this inquiry we are concerned with what objects we perceive, or our own Ideas, ſo, upon them our reaſonings muſt proceed. To treat of things utterly unknown as if we knew them, and ſo lay our beginning in obſcurity, would not ſurely ſeem the propereſt means for the diſcovering of Truth. Hence it follows, that it would be wrong if one about to treat of the nature of Viſion, ſhould, inſtead of attending to viſible Ideas, define the object of Sight to be that obſcure cauſe, that inviſible power or agent, which produced viſible Ideas in our minds. Certainly ſuch cauſe or power does not ſeem to be the object either of the ſenſe or the ſcience of Viſion, inaſmuch as what we know thereby we know only of the effects.

Having premiſed thus much, I now proceed to conſider the Principles laid down in your letter, which I ſhall take in order as they lie.

XIX.

26 IN your firſt paragraph or ſection, you ſay that "Whatever it is without which is the cauſe of any Idea within, you call the object of ſenſe;" and you tell us, ſoon after this,*[27] "That we cannot poſſibly have an Idea of any object without." Hence it follows, that by an object of ſenſe, you mean ſomething that we can have no manner of Idea of. This making the objects of ſenſe to be things utterly inſenſible, ſeems to me contrary to common ſenſe and the uſe of language. That there is nothing in the reaſon of things to juſtify ſuch a definition, is, I think, plain from what has been premiſed.†[28]

19-34 contain answers to the special objections of the Anonymous Writer, & genera
ks upon his Letter.

[27] * [Sect. iv.]—Author.

[28] † [Supra, sects. ix. xi. xii]—Author. Berkeley & his criti
he term object differently, which must be remembered in what follows.

And that it is contrary to received cuſtom and opinion, I appeal to the experience of the firſt man you meet, who I ſuppoſe will tell you that by an object of ſenſe he means that which is perceived by ſenſe,29 and not a thing utterly unperceivable and unknown. The beings, ſubſtances, powers which exiſt without, may indeed concern a treatiſe on ſome other ſcience, and may there become a proper ſubject of inquiry; but, why they ſhould be conſidered as Objects of the Viſible Faculty in a treatiſe of Optics, I do not comprehend.

XX.

THE real objects of ſight we ſee, and what we ſee we know. And theſe true objects of ſenſe and knowledge, to wit, our own Ideas, are to be conſidered, compared, diſtinguiſhed, in order to underſtand the true Theory of Viſion, as to the outward cauſe of theſe Ideas, whether it be one and the ſame, or various and manifold, whether

i.e. immediately perceived, or of which we have a self-consciousness. Here, as elsew
rkeley insists upon the distinction between the sensations of which we are ach
rceptions which he calls objects or ideas, on the one hand, & on the other hand, (a) un
conceivable, may be indeed is suggested by the sensation, whether called physic
bstance or physical cause—which he accepts; as well as (b) abstract or unconce
bstance & cause—which he absolutely rejects. The contrast between objects-prob

it be thinking or unthinking, ſpirit or body, or whatever elſe we conceive or determine about it, the viſible appearances do not alter their nature, our Ideas are ſtill the ſame. Though I may have an erroneous notion of the cauſe, or though I may be utterly ignorant of its nature; yet this does not hinder my making true and certain judgments about my Ideas; my knowing which are the ſame, and which different; wherein they agree, and wherein they diſagree; which are connected together, and wherein this connexion conſiſts; whether it be founded in a likeneſs of nature, in a geometrical neceſſity, or merely in experience and cuſtom.[30]

XXI.

IN your ſecond ſection, you ſay, "That if we had but one ſenſe, we might be apt to conclude there were no objects at all without us: but that, ſince the ſame object is the cauſe of Ideas by different ſenſes,

which last it is referred by Berkeley.

thence we infer its exiſtence;" now, in the firſt place, I obſerve, that I am at a loſs concerning the point which is here aſſumed, and would fain be informed how we come to know that the ſame object cauſeth Ideas by different ſenſes. In the next place I muſt obſerve, that if I had only one ſenſe, I ſhould nevertheleſs infer and conclude there was ſome cauſe without me (which you, it ſeems, define to be an object) producing the ſenſations or Ideas perceived by that ſenſe: for, if I am conſcious that I do not cauſe them, and know that they are not the cauſe of themſelves, both which points ſeem very clear, it plainly follows, that there muſt be ſome other third cauſe diſtinct from me and them.[31]

XXII.

IN your third ſection, you acknowledge with me, "That the connexion between Ideas of different ſenſes ariſeth only from experience;" herein we are agreed: In

Hence, an external or independent world (of some sort) may be inferred fr
sensations of which we are conscious in any one of the senses—our con
tion of our own personal agency, & of its limits, being of course assumed.

your fourth ſection you ſay, "That a word denoting an external object, is the repreſentative of no manner of Idea. Neither can we poſſibly have an Idea of what is ſolely without us:" what is here ſaid of an external unknown object, hath been already conſidered.[*32.]

XXIII.

IN the following ſection of your letter, you declare, "That our Ideas have only an arbitrary connexion with outward objects, that they are nothing like the outward objects, and that a variation in our Ideas doth not imply or infer a change in the objects, which may ſtill remain the ſame." Now, to ſay nothing about the confuſed uſe of the word object, which hath been more than once already obſerved, I ſhall only remark, that the points aſſerted in this ſection do not ſeem to conſiſt with ſome others that follow.

[32*] [Supra, sect. xix.] – Author!

XXIV.

FOR in the ſixth ſection you ſay, "That in the preſent situation of things, there is an infallible certain connexion between the Idea and the object;"* but how can we perceive this connexion, ſince, according to you, we never perceive ſuch object, nor can have any Idea of it? or, not perceiving it,

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* We now come to discuss the views of the representationists, who were referred to in the note to sect. ii. They may be divided into two classes: (1.) Those who suppose the *immediate* object of perception to be *in* the mind, but *distinct from it as to its nature;* (2.) those who regard *ideas* as *modes of the percipient mind.* Locke probably held the 1st doctrine, for in book iv. chap. iv. sect. 3, of his Essay, he bases the reality of our knowledge on the conformity of our ideas to the external things they represent. He perceives the difficulty of accounting for the veracity of our knowledge on his theory, "How shall the mind," he supposes an objector to enquire, "when it perceives nothing but its own ideas, know that they agree with things themselves." His answer is, "Simple ideas carry with them all the conformity which is intended, or which our state requires: for they represent to us things, under those appearances, which they are fitted to produce in us." "This conformity between our simple ideas, and the existence of things, is suffi-

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cient for real knowledge." If this vicarious image *alone* enables us to judge of the reality of things, the world, as a material substance, becomes only a possible conjecture, without any proof for its confirmation; for it is absurd to say that ideas are like external things, since we start with the hypothesis that these are unknown and unknowable, except through reflecting images. "If it be asked," says Dr. John Young, "whether this room be *like* the *idea* which I have of it, what can the meaning of the question be, but this: whether the idea which I have of it be really the idea which I have of it; since I know nothing of it but my ideas. What do I know about the appearance of the room, but that notion or idea of it; and if I know nothing else how can I compare it with anything else?"—*Lectures on Intellectual Philosophy*, Lect. xv. sect. 1. Brown, with other metaphysicians, has supposed that this difficulty will be removed by adopting the 2d hypothesis. "The whole force of the pious demonstration," he triumphantly exclaims, "which Berkeley flattered himself with having urged irresistibly, is completely obviated by the simple denial that ideas are anything more than how can we know this connexion to be infallibly certain?

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the mind itself affected in a certain manner."—(See *Works*, vol. ii. p. 18.) Arnauld, after maintaining that ideas are only modifications of the percipient, cautions us, "Ce que j'entends par les *êtres* représentatifs, en tant que je les combats comme des entités superflues, ne sont que ceux que l'on s'imagine être réellement distingués des idées prises pour des perceptions; car je n'ai garde de combattre toutes sortes d'êtres ou de modalités *représentatives;* puisque je sountiens qu'il est clair, à quiconque fait réflexion sur ce qui se passe dans son esprit, que toutes nos perceptions sont des modalités essentiellement *représentatives*." — *Des Vraies et des Fausses Idées*, chapitre v. §. 7. Surely we are only involved in a more inextricable difficulty. This conjecture not only denies to us any *immediate* knowledge of the *non-ego*, but resolves everything into mind, and involves the absurdity of believing an *idea*, or the object perceived, to be identical with the percipient act. To quote again, in evidence of this interpretation of their doctrine, the words of Arnauld:—"Je prends aussi pour la même chose l'*idée* d'un object et la *perception* d'un objet." Roger-Collard reasonably enquires, "Si nous ne voyons que des idées, comment savons-nous que la chose que nous voyons

XXV.

IN the ſeventh ſection, it is ſaid, "That we may, from our infallible experience, argue from our Idea of one ſenſe to that of another." But I think it is plain, that our Experience of the connexion between Ideas of Sight and Touch, is not infallible; ſince if it were there could be no *Deceptio Visus*, neither in Painting, Perſpective, Dioptrics, nor any otherwiſe.

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est l'image d'une chose que nous n'avons jamais vue? Quel est le raisonnement qui peut nous faire conclure avec certitude de la vue d'un portrait, quelque ressemblant qu'on le suppose, l'existence d'un original qui nous est inconnu? Si celui-ci est invisible, comment venons-nous donc à le connaître? . . . . . . Si l'image disparaît après avoir introduit la chose signifiée, nous avons donc *deux perceptions successives*." *Fragments* I.—*Œuvres de Thomas Reid*,—Tom. iii. In fine, this theory, by denying the reliability of the utterances of consciousness, is self-destructive: and we may truly say of it, that it "is at best an enchanted corpse, awaiting only the exorcism of the sceptic to relapse into its proper nothingness."—Ed.

XXVI.

IN the laſt ſection you affirm, "That experience plainly teaches us, that a juſt proportion is obſerved in the alteration of the Ideas of each ſenſe, from the alteration of the object." Now I cannot poſſibly reconcile this ſection with the fifth, or comprehend how experience ſhould ſhew us, that the alteration of the object produceth a proportionable alteration, in the Ideas of different ſenſes; or how, indeed, it ſhould ſhew us anything at all, either from or about the alteration of an object utterly unknown, of which we neither have nor can have any manner of Idea. What I do not perceive or know, how can I perceive or know to be altered? And knowing nothing of its alterations, how can I compute anything by them, deduce anything from them, or be ſaid to have any experience about them?33.

In the preceding section, Berkeley is virtually arguing against the possib
an ultimately presentative perception or intelligence of the supposed
al substance or cause. We can imagine & infer only what we have had
amples of in our previous presentative experience. He here & elsewhere anticipa
ections of Reid & Hamilton to a representative perception of things whose existence
in an absolute divorce from mind, & which, therefore, have not been previou

XXVII.

FROM the obſervations you have premiſed, rightly underſtood and conſidered, you ſay it follows, "That my *New Theory of Viſion* muſt in great meaſure fall to the ground; and the laws of Optics will be found to ſtand upon the old unſhaken bottom." But, though I have conſidered and endeavoured to underſtand your remarks, yet I do not in the leaſt comprehend how this concluſion can be inferred from them. The reaſon you aſſign for ſuch inference is, "Becauſe, although our Ideas in one ſenſe are entirely different from our Ideas in another, yet we may juſtly argue from one to the other, as they have one common cauſe without; of which, you ſay, we cannot poſſibly have even the fainteſt Idea." Now my Theory nowhere ſuppoſeth, that we may not juſtly argue from the Ideas of one ſenſe to thoſe of another, by analogy and by experience;

on the contrary, this very point is affirmed, proved, or ſupported throughout.*[34]

XXVIII.

INDEED, I do not ſee how the inferences which we make from viſible to tangible Ideas include any conſideration of one common unknown external cauſe, or depend thereon, but only on mere cuſtom or habit. The experience which I have had, that certain Ideas of one ſenſe are attended or connected with certain Ideas of a different ſenſe, is, I think, a ſufficient reaſon why the one may ſuggeſt the other. †

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[34] * [Theory of Vision, sect. xxxviii. vxxviii, &c]—Auth. ver.

† Mr. Bailey objects to the manner in which Berkeley uses the word *suggest*, and states his charges as follows :—"Suppose we have an internal feeling A, which has never been attended with any sensation or perception of outness, and that it is experienced at the same time with the external sensation B. After A and B have been thus experienced together, they will according to

XXIX.

IN the next place you affirm, "That ſomething without, which is the cauſe of all the variety of Ideas within, in one

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the law of association suggest each other. When the internal feeling occurs, it will bring to mind the external one, and *vice versâ.* But this is all. Let there be a thousand repetitions of the internal feeling with the external sensation, and all that can be effected will be that one will invariably suggest the other. Berkeley's Theory, however, demands more than this. He maintains, that because the internal feeling has been found to be accompanied by the external one, it will, when experienced alone, not only suggest the external sensation, but *absolutely be regarded as external itself;* or rather be converted into the perception of an external object." It seems to me that the Sheffield philosopher has been at pains to refute an imaginary error. I am far from intimating that the objection was raised merely to display agility in criticism, but it appears to me clear that he has misunderstood the views of Berkeley. In the present work, as in all his later productions, Berkeley denies that we have any knowledge of ſenſe, is the cauſe alſo of the variety in another: and as they have a neceſſary connexion with it, we very juſtly demon-

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ought external, limiting our cognitions to the information conveyed by ideas which are *in* but *not of* the mind. In his original treatise on Vision this part of his theory is less fully developed, and by no means as clearly enunciated; he never, however, falls into the curious absurdity ascribed to him; but, on the contrary, distinctly and repeatedly states, that the ideas or objects of sight "neither are, nor appear to be, without the mind; or at *any* distance off." "Whenever we say an object is at a distance, whenever we say it draws near, or goes farther off, we must always mean it of the latter sort, which properly belong to the touch." (sect. 50.) He also (in sect. 45) explains correctly the nature of suggestion. "Having of a long time experienced certain ideas, perceivable by touch, as distance, tangible figure, and solidity, to have been connected with certain ideas of sight, I do upon perceiving these ideas of sight, forthwith conclude what tangible ideas are, by the wonted ordinary course of nature like to follow." Whatever ambiguity of expression there may be in certain sentences, the whole difficulty will be cleared up in gathering the sense by carefully collating the passages that refer to the ſtrate from our Ideas of feeling of the ſame object, what will be our Ideas of ſeeing." As to which give me leave to

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point. Berkeley, it will be seen, never asserts that we regard the internal feeling as external, but merely affirms that we learn to connect certain visual appearances with certain tactile impressions. Again, Mr. Bailey tells us that Berkeley avers that "*outness* is not seen, but only *suggested* to our thoughts. Now the process of suggestion," he goes on to say, "can take place only when one of the objects is absent. When, for example, I see an orange, without handling it, the appearances may suggest its tangible properties, but when I both see it and handle it, suggestion has no place. . . . If, then, the perception of visible outness is owing to suggestion, it would follow that while I was both handling and looking at the orange, its visible figure would seem an internal figure, but on quitting my hold the same visible figure would appear to be external." (*Review of Berkeley's Theory of Vision,* chap. i. sect. 1.) The remarks on the former objection will apply to this also. Berkeley only says that we learn, by experience, the relation between percepts of sight and percepts of touch co-identical with them in time and co-existent in place; which leads us to apply the same remark, that to inquire whether that unknown ſomething be the ſame in both caſes, or different, is a point foreign to Optics;

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name to the objects of both senses. When a rose is before our eyes, and our olfactory nerves at the same time convey to us an agreeable fragrance, this odour becomes associated in our minds with the rose, but we never speak of *seeing* the aroma, but of *smelling* the rose. "When Miss Curteous," says Tucker, "entertains you with a lesson upon her harpsichord, both she and the instrument are causes operating to your delight, for you thank her for the favour, and may speak indifferently of hearing the one or the other: but when you consider what is the *object* of your hearing, you will not call it either the lady or the harpsichord, but the music." (*Light of Nature*, vol. i. chap. vii. sect. 1.) This quotation may serve to exemplify the laxity with which, in ordinary conversation, we transfer an *object* from one sense to another, and speak of hearing or smelling that object; when, in strict propriety, we are only directly conscious of a certain sensation which has become associated in our thoughts with something, known by some other sense, to which we believe it stands related.

With regard to *outness*, or the *externality* of things, Berkeley ought, to be consistent with his inaſmuch as our perceptions, by the viſive faculty, will be the very ſame, however we determine that point. Perhaps[35] I think, that the ſame Being[36] which cauſeth our Ideas of ſight, doth cauſe not only our Ideas of touch likewiſe, but alſo all our Ideas of all the other ſenſes, with all the varieties thereof. But this, I ſay, is foreign to the purpoſe.[37]

XXX.

As to what you advance, that our Ideas have a neceſſary connexion with ſuch

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principles, to know nothing, as Mr. Bailey has elsewhere pointed out; for if he knows what external things are, it can only be by perceiving them to be external, which contradicts his theory. If, on the other hand, he does not know them, he is incapable of using the term *external* with any distinct meaning. In *The Theory of Vision*, Berkeley gives to touch the power of conveying to our minds this notion of outness, which he denies to sight: in this vindication, he extends his opinions to a system of pure idealism, which holds that we have no knowledge of the existence of a material world, *through the senses*.—Ed.

this 'perhaps' implying any hesitation on Berkeley's part as to the essence of hi
philosophy — the substantiality & causality of sensible things in God, as oppo
r substantiality & causality in an unknown & incognizable essence, out of all rela
ind. [36] God [37] For, in Optics we are concerned exclusively, accordin
ley, with the effects (i.e. our sensations or sense-ideas); & their relation to one anoth
mediately-perceived sign & immediately-perceived meaning.

cauſe, it ſeems to me *gratis dictum*; no reaſon is produced for this aſſertion: and I cannot aſſent to it without a reaſon. The Ideas or effects, I grant, are evidently perceived: and the cauſe you ſay is utterly unknown.[38] How then can you tell whether ſuch unknown* cauſe acts arbitrarily or neceſſarily? I ſee the effects or appearances; and I know that effects muſt have a cauſe, but I neither ſee nor know that this connexion with that cauſe is neceſſary. Whatever there may be, I am ſure I ſee no ſuch neceſſary connexion, nor, conſequently, can demonſtrate by means thereof from Ideas of one ſenſe to thoſe of another.

XXXI.

YOU add, that although to talk of ſeeing by tangible angles and lines be direct nonſenſe, yet, to demonſtrate from angles and lines in feeling to the ideas in ſeeing that ariſe from the ſame common object, is very good ſenſe. If by this no more is meant, than that men might argue and compute geometrically by lines and angles in optics, it is ſo far from carrying in it any oppoſition to my Theory, that I have expreſſly declared the ſame thing.[39] This doctrine, as admitted by me, is indeed ſubject to certain limitations; there being divers caſes wherein the writers of Optics thought we judged by lines and angles, or by a ſort of natural geometry; with regard to which I think they were miſtaken, and I have given my reaſons for it. And thoſe reaſons, as they are untouched in your letter, retain their force with me.

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[38]* [Letter, sects. i. and iv.]—Author.

XXXII.

I HAVE now gone through your Reflexions, which the concluſion intimates to have been written in haſte, and having conſidered them with all the attention I am

Theory of Vision, sect. 78] – Author.

maſter of, muſt now leave it to the thinking reader to judge whether they contain anything that ſhould oblige me to depart from what I have advanced in my *Theory of Viſion.* For my own part, if I were ever ſo willing, it is not on this occaſion in my power to indulge myſelf in the honeſt ſatisfaction it would be frankly to give up a known error; a thing ſo much more reſpectable to denounce than to defend. On the contrary, it ſhould ſeem that the Theory will ſtand ſecure, ſince you agree with me, that men do not ſee by lines and angles; ſince I, on the other hand, agree with you, that we may nevertheleſs compute in Optics by lines and angles, as I have expreſſly ſhewed; since all that is ſaid in your letter about the object, the ſame object, the alteration of the object, is quite foreign to the Theory, which conſidereth our Ideas[40] as the object of ſenſe, and hath nothing to do with that unſeen, unknown, unintelligible thing which you ſignify by the word *Object.*[41] Certainly, the

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[40] i.e. our sensations

[41] [Supra, sect. 14] — Author.

Laws of Optics will not ſtand on the old, unſhaken bottom, if it be allowed, that we do not ſee by Geometry[42]; if it be evident that explications of phenomena given by the received theories in Optics are inſufficient and faulty; if other principles are found neceſſary for explaining the nature of Viſion; if there be no Idea, nor kind of Idea, common to both ſenſes[43] contrary to the old received univerſal ſuppoſition of optic writers.

XXXIII.

WE not only impoſe on others, but often on ourſelves, by the unſteady or ambiguous uſe of terms. One would imagine that an object ſhould be perceived; I muſt own, when that word is employed in a different ſenſe, that I am at a loſs for its meaning, and conſequently cannot comprehend any arguments or concluſions about it; and I am not ſure that on my own part ſome inaccuracy of expreſſion, as well as

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[*Letter*, sect. 8]—Author.

[43] [*Theory of Vision*, sect. 127]—Author.

the peculiar nature of the ſubject, not always eaſy either to explain or conceive, may not have rendered my Treatiſe concerning Viſion difficult to a curſory reader. But to one of due attention, and who makes my words an occaſion of his own thinking, I conceive the whole to be very intelligible: and when it is rightly underſtood, I ſcarce doubt but it will be aſſented to. One thing at leaſt I can affirm, that if I am miſtaken I can plead neither haſte nor inattention, having taken true pains and much thought about it.

XXXIV.

AND had you, Sir, thought it worth while to have dwelt more particularly on the ſubject, to have pointed out diſtinct paſſages in my Treatiſe, to have anſwered any of my objections to the received notions, refuted any of my arguments in behalf of mine, or made a particular application of your own; I might without doubt have profited by your reflections. But it ſeems to me, we have been conſidering either different things or elſe the ſame things in ſuch different views as the one can caſt no light on the other. I ſhall, nevertheleſs, take this opportunity to make a review of my Theory, in order to render it more eaſy and clear; and the rather becauſe, as I had applied myſelf betimes to this ſubject, it became familiar; and in treating of things familiar to ourſelves, we are too apt to think them ſo to others.

XXXV.

[44]IT ſeemed proper, if not unavoidable, to begin in the accuſtomed ſtyle of optic writers, admitting divers things as true, which in a rigorous ſenſe are not ſuch, but only received by the vulgar and admitted as ſuch. There hath been a long and cloſe connexion in our minds between the ideas[45] of ſight and touch. Hence they are con-

Sect 35-47 contain a restatement of the New Theory of a Divine Lang
sion, conveyed to us by suggestion. In sect 48-70 this Theory is employed
lain deductively our visual discernment of the real Situation, Size, & D
ce of sensible things.

5 i.e. sensations.

ſidered as one thing, which prejudice ſuiteth well enough with the purpoſe of life, and language is ſuited to this prejudice. The work of ſcience and ſpeculation is to unravel our prejudices and miſtakes, untwiſting the cloſeſt connexions, diſtinguiſhing things that are different, inſtead of confuſed or perplexed, giving us diſtinct views, gradually correcting our judgment, and reducing it to a philoſophical exactneſs. And as this work is the work of time, and done by degrees, it is extremely difficult, if at all poſſible, to eſcape the names of popular language, and the being betrayed thereby to ſay things, ſtrictly ſpeaking, neither true nor conſiſtent.[46.] This makes thought and candour more eſpecially neceſſary in the reader. For, language being accommodated to the prænotions of men and uſe of life, it is difficult to expreſs therein the precise truth of things, which is ſo diſtant from their uſe, and ſo contrary to our prænotions.

[46] Cf. Principles of Human Knowledge – 'Introduction'

XXXVI.

IN the contrivance of Viſion, as that of other things, the wiſdom of Providence ſeemeth to have conſulted the operation, rather than the theory of man; to the former things are admirably fitted, but, by that very means, the latter is often perplexed. For, as uſeful as theſe immediate ſuggeſtions and conſtant connexions are to direct our actions, ſo is our diſtinguiſhing between things confounded, and as it were blended together, no leſs neceſſary to the ſpeculation and knowledge of truth.

XXXVII.

THE knowledge of theſe connexions, relations, and differences of things viſible and tangible, their nature, force, and ſignificancy hath not been duly conſidered by former writers on Optics, and ſeems to have been the great *deſideratum* in that ſcience, which for want thereof was confuſed and imperfect. A Treatiſe therefore of this philoſophical kind, for the underſtanding of Viſion, is at leaſt as neceſſary as the phyſical conſideration of the eye, nerve, coats, humours, refractions, bodily nature, and notion of light, or the geometrical application of lines and angles for *praxis* or theory in dioptic glaſſes and mirrors for computing and reducing to ſome rule and meaſure our judgment ſo far as they are proportional to the objects of Geometry. In theſe three lights Viſion ſhould be conſidered in order to a complete theory of Optics.

XXXVIII.

IT is to be noted that, in conſidering the Theory of Viſion, I obſerved a certain known method wherein from falſe and popular ſuppoſitions, men do often arrive at Truth, whereas in the ſynthetical method of delivering ſcience or truth already found, we proceed in an inverted order, the concluſions in the analyſis being aſſumed as principles in the ſyntheſis; I ſhall therefore now begin with that concluſion, that *Viſion is the Language of the Author of Nature*,* from thence deducing theorems and ſolutions of phenomena, and explaining the

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* An anonymous biographer gives the following explanation of the use of this phraseology by Berkeley. "It is an argument *ad hominem* in answer to a somewhat unreasonable demand of a minute philosopher, who insists upon having the same evidence for the being of a God that he has for that of his fellow mortals, to wit, the use of speech. It is the arbitrary use, saith the objector, of sensible signs, which have no similitude or necessary connexion with the things signified by them, and which *suggest* to my mind an endless variety of things serving to inform me, and direct my conduct both present and future: it is this principally that convinces me of the existence of another intelligent, thinking person, speaking to me: shew me that God *speaks* to man in the same manner, by the intervention of *arbitrary signs*, no matter by which sense they enter into the mind, whether by the ear or by the eye, provided they have no necessary connexion with the things they suggest; such a proof only as this will content me. Such a proof as this you actually have, replies his

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opponent, in the connexion you find between sight and touch, which is perfectly arbitrary, and as much learned from experience as the signification of words is."—*Life of Berkeley*, Anon. 1776.

Hutcheson, who was cotemporary with Berkeley, in like manner compares our sensations to arbitrary signs. "These sensations," he remarks, "as the learned agree, are not pictures or representations of like external qualities in objects, nor of the impression or change made in the bodily organs. They are either *signals*, as it were, of new events happening to the body, of which experience and observation will shew us the cause; or *marks*, settled by the Author of nature, to shew us what things are salutary, innocent, or hurtful; or intimations of things not otherwise discernible, which may affect our state; though these marks or signals bear no more resemblance to the external reality than the report of a gun, or the flash of the powder, bears to the distress of a ship."—*Moral Philosophy*, book i. chap. i. sect. 3.

A still more important passage is found in *Scepsis Scientifica* (chap. v. p. 22) of Joseph Glanvill (published in London in 1665, forty-four years before the appearance of the *Theory of Vision*): "How is it, and by what art doth it (the mind) nature of viſible things and the viſive faculty. 47

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read that such an image or stroke in *matter*. . . signifies such an *object*? Did we learn an alphabet in our *embryo-state*? And how comes it to pass that we are not aware of any such congenite apprehensions? . . . That by diversity of *motions* we should spell out *figures*, *distances*, *magnitudes*, *colours*, things not resembled by them, we must attribute to some secret *deduction*. But what this deduction should be, or by what *mediums* this knowledge is advanced, is as dark as ignorance. One that hath not the knowledge of letters, may see the *figures*; but comprehends not the meaning included in them: an infant may hear the sounds, and see the motion of the lips, but hath no conception conveyed by them, not knowing what they are intended to signify. So our *souls*, though they might have perceived the motions and images themselves by *simple-sense*, yet without some *implicit inference* it seems inconceivable how by that means they should apprehend their *archetypes*. Moreover, *images* and *motions* are in the brain in a very inconsiderable latitude of space, and yet they represent the greatest *magnitudes*. The image of an *hemisphere* of the upper globe cannot be of a wider circumference than of a wall-nut: and how can such petty impressions notify such

the original Essay towards a New Theory of Vision, Berkeley proceeds ana
; whereas, in the following synopsis, he first hypothetically assumes the the
Visual Language — with which the earlier treatise concludes, & then verifies i
ing synthetically how it explains the phenomena of Vision; & in particula
s difficulties contained in our judgments of the situations, sizes, & distance
gs. See Editor's (A. C. Fraser's) Preface to the Essay p. 6, note.

XXXIX.

IDEAS which are obſerved to be connected with other Ideas, come to be

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vastly expanded objects but through some kind of *scientifical* method and geometry in the principle? Without this it is not conceivable how *distances* should be perceived, but all objects would appear in a cluster, and lie in as narrow a room as their images take up in our *scantier craniums*. Nor will the philosophy of the most ingenious *Des Cartes* help us out: for, *the striking of divers filaments of the brain* cannot be supposed to represent *distance*, except some such kind of *inference* be allotted us in our faculties, the conception of which will only stead us as a refuge for *ignorance;* where we shall meet what we should seem to shun." Mr. Bailey refers to this passage in detraction of Berkeley's originality; and without much lessening our respect for our author's merits, we may admit the probability that he had seen the *Scepsis Scientifica.*

Mr. J. D. Morell remarks:—"We have no apparatus of representationism between the world as it is, *per se*, and the percipient mind, but simply a system of impulses, first conveyed to the brain and then interpreted there by the soul. These impulses conſidered as ſigns, by means whereof things, not actually perceived by ſenſe, are ſignified or ſuggeſted to the imagination whoſe objects they are and which alone

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are, as it were, divinely constituted languages of inward signs, which the soul has to learn and to read; but it were vain to say that that *interpretation* must be identical with the physical impression made upon the body." . . . "We must, in fine, refer the whole *process* and the whole *certitude* of our intuitive perceptions to that pre-established harmony between the soul and nature which has adapted them to each other, and enabled us to read from our own internal feelings the laws and operations of the world without."—J. D. Morell, *Elements of Psychology*, chap. iv. sect. 1. See also Adam Smith, *Works*, vol. v. p. 374. I do not think it desirable to borrow the word *impulse* from the physical world, to explain the manner in which matter acts upon mind, which is so *unique* and inexplicable that it is better not to attempt to define it. The connexion between the *percepts* of sight, and those derived through touch, is *arbitrary*, depending upon our organization, which modifies our knowledge of what is external to us; and we are, to a great extent, dependent upon experience to teach us the con-perceives them. And as ſounds ſuggeſt other things, ſo characters ſuggeſt other ſounds; and, in general, all ſigns ſuggeſt the things ſignified, there being no Idea which may not offer to the mind another Idea, which hath been frequently joined with it. In certain caſes a ſign may ſuggeſt its correlative as an image, in others as an effect, in others as a cauſe. But where there is no ſuch relation of ſimilitude or cauſality, nor any neceſſary connexion whatſoever, two things, by their mere coexiſtence, or two Ideas, merely by being perceived together, may ſuggeſt or ſignify one the other, their connexion being all the while arbitrary; for it is the connexion only, as ſuch, that cauſeth this effect.[48]

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nexion between the *appearances* presented by these senses, whose full signification is known to us only by the exercise of judgment and the deductions of reason.—Ed.

is doctrine of 'suggestion' is the constructive principle of the New Theory; whi
application, in a great scale, of the law of constant association, regulatin
ination & belief in individuals, in established harmony with the Divine
ons among sensations, common to a plurality of individuals, & which
the order of external nature. It should be compared with Kant's theory
ption, according to which sensations, received into the necessary forms of
, are constructed or made intelligible by the categories. Cf. Siris, sect. 318, whe
lley says that space is neither an intellectual notion, nor perceived by any

XL.

A GREAT number of arbitrary ſigns, various and oppoſite, do conſtitute a language. If ſuch arbitrary connexion be inſtituted by men, it is an Artificial Language; if by the Author of Nature, it is a Natural Language. Infinitely various are the modifications of Light and ſound, whence they are each capable of ſupplying an endleſs variety of ſigns, and, accordingly, have been each employed to form Languages; the one by the arbitrary appointment of Mankind, the other by that of God Himſelf.*49/A connexion eſtabliſhed by the Author of Nature, in the ordinary courſe of things, may ſurely be called Natural, as that made by Men will be named Artificial. And yet, this doth not hinder that the one may be as arbitrary as the other, and, in fact, there is no more

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49* [Minute Philosopher, dial. iv. sects. 7, 11.]—Author.

likeneſs to exhibit, or neceſſity to infer, things tangible from the modifications of Light, than there is in Language, to collect the meaning from the ſound.*50. But, ſuch as the connexion is of the various tones and articulations of voice with their ſeveral meanings, the ſame is it between the various modes of Light and their reſpective correlatives, or, in other words, between the Ideas of ſight and touch.

XLI.

AS to Light, and its ſeveral modes or colours, all thinking men are agreed that they are Ideas peculiar only to ſight; neither common to the touch, nor of the ſame kind with any that are perceived by that ſenſe.† But herein lies the miſtake,

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50* [Theory of Vision, sect. cxliv.—cxlvii.] -Author.

† As I do not admit the theory of ideas as objects of perception, under any of its modifi-

that beſide theſe, there are ſuppoſed other Ideas common to both ſenſes, being equally perceived by ſight and touch, ſuch as extenſion, ſize, figure, and motion. But that there are in reality no ſuch common Ideas, and that the objects[51] of ſight, marked by theſe words, are entirely different and heterogeneous from whatever is the object[52]

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cations, I cannot assent to Berkeley's opinion under its present form. But the belief that the *ego* receives direct communications from the *non-ego*, does not prevent me from holding the opinion that certain properties inhering in these objects, are made known to us through the medium of one sense, while other peculiarities and qualities are discovered to us by another bodily organ. Whether the same information shall be conveyed by all the avenues to our spiritual being, or whether each shall have a distinct function assigned to it, depends upon the will of our Creator. What we have to do, is to take the notions which we have of things, and if possible, trace them to their various sources. That we see and touch *real* things *external* to ourselves is one question, but whether we touch and see the *same* things

: the immediate objects, or sensations, of which we are visually ~~tactually & musco~~
y conscious.

e. the immediate objects, or sensations, of which we are tactually
scularly conscious.

of feeling, marked by the ſame names, hath been proved in the *Theory*,[*53] and ſeems by you admitted; though I cannot conceive how you ſhould in reaſon admit this, and at the ſame time contend for the received theories, which are ſo much ruined, as mine is eſtabliſhed, by this main part and pillar thereof.

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is another point, which must be discussed apart. There is no absurdity in the supposition that these *might be* entirely disconnected, but I think a careful investigation of the *facts* of the case will prove to us that the *objects* of sight and the *objects* of touch are the same, although it would be unphilosophical to make the *à priori* announcement that they are so. They are fused by the faculties of our minds into one homogeneous whole, capable of being separated, by a process of analysis, into its primary elements. In future notes I shall examine the statements made in the text, and criticise, as I proceed, the legitimacy of the process and the accuracy of the inferences deduced.—Ed.

[53*] [Theory of Vision, sect. cxxvii.]—Author.

XLII.

TO perceive is one thing, to judge is another. So, likewiſe, to be ſuggeſted is one thing, and to be inferred another. Things are ſuggeſted and perceived by ſenſe. We make judgments and inferences by the underſtanding. What we immediately and properly perceive by ſight is its primary object, Light and Colours. What is ſuggeſted or perceived by mediation thereof are tangible Ideas, which may be conſidered as ſecondary and improper objects of ſight. We infer cauſes from effects, effects from cauſes, and properties one from another, where the connexion is neceſſary. But, how comes it to paſs, that we apprehend by the Ideas of ſight certain other Ideas, which neither reſemble them, nor cauſe them, nor are cauſed by them, nor have any neceſſary connexion with them? The ſolution of this problem, in its full extent, doth comprehend the whole Theory of Viſion.[54.] This ſtating of the matter placeth it on a new foot, and in a different light from all preceding Theories.

XLIII.

TO explain how the mind or ſoul of man ſimply ſees, is one thing, and belongs to Philoſophy. To conſider particles as moving in certain lines, rays of light as refracted, or reflected, or croſſing, or including angles, is quite another thing, and appertaineth to Geometry. To account for the ſenſe of viſion by the mechaniſm of the eye, is a third thing, which appertaineth to Anatomy and experiments. These two latter ſpeculations are of uſe in practice, to aſſiſt the defects and remedy the diſtempers of ſight, agreeably to the natural laws contained in this mundane ſyſtem. But the former theory is that which makes us underſtand the true Theory of Viſion, conſidered as a faculty of the ſoul. Which theory, as I

- according to Berkeley, the Theory of Vision involves merely the two eleme
mmediate perception (of the proper objects or sensations of each sense);
tion in imagination (of what had previously been perceived simultan
another of the senses) Judgment & reasoning are assigned to the Understa
onversant with necessary truth; or not with arbitrary associations, either in
[illegible]

have already obſerved,[55] may be reduced to this ſimple queſtion, to wit, how comes it to paſs, that a ſet of Ideas altogether different from tangible Ideas, ſhould nevertheleſs ſuggeſt them to us, there being no neceſſary connexion between them? To which the proper anſwer is, that this is done in virtue of an arbitrary connexion, inſtituted by the Author of Nature.

XLIV.

THE proper, immediate object of Viſion is Light, in all its modes and variations, various colours in kind, in degree, in quantity; ſome lively, others faint, more of ſome and leſs of others; various in their bounds or limits; various in their order and ſituation.[56] A blind man, when firſt made to ſee, might perceive theſe objects,[57] in which there is an endleſs variety, but he would neither perceive nor imagine any reſemblance or connexion between theſe viſible objects and thoſe perceived by feel-

e preceding section.
4. *Essay towards a New Theory of Vision*, sect. 43.
e. be conscious of these sensations.

ing.*[58] Lights, ſhades, and colours would ſuggeſt nothing to him about bodies, hard or ſoft, rough or ſmooth: nor would their quantities, limits, or order, ſuggeſt to him geometrical figures, or extenſion,† or ſitua-

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[58] * [Theory of Vision, sects. xli. and cvi.]—Author.

† We must consider *extension* with reference to two questions, and enquire, (1) Whether we can know bodies, as extended, at all by *sight;* (2) Whether the ability to perceive extension by sight, if it be possessed, be an original and primordal attribute of mind or an acquired and synthetical process.

Berkeley seems to have been the first philosopher to deny to unaided sight the ability to make us conversant with *extension.* His opinions have been adopted by Stewart, Brown, Mills, and many other eminent philosophers. On the other hand, D'Alembert affirms that sight gives us the notion of extension more readily than touch, and Platner even reverses the original thesis and maintains that this quality can *only* be ascertained through the medium of visual perception.

Those who deny to us a *direct* knowledge of the *outness* of things affirm that the eye is impressible only to colour, which implies no acquaintance with any outward object as a cause, or a thing wherein tion, which they muſt do upon the received ſuppoſition, that theſe objects are common to ſight and touch.

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the colour inheres. In carrying out these views, Brown thinks the retina as incapable of informing us how much of its expanse is affected, as the ear or the olfactory nerve. Now this is contradicted by experience; and there is certainly no reason to conclude that the optic nerve is limited in its operation in the same way as the auditory and olfactory nerves are. In reply to such assertions, the following propositions of Sir William Hamilton seem fatal. 1. That we see colour. 2. That the power of perceiving colour involves the power of perceiving the differences of colour. 3. That the colours discriminated in vision may be placed side by side in immediate juxtaposition; or, one may limit another by being superinduced partially over it. 4. That the contrasted colours thus bounding each other will form by their meeting a visible line, and that, if the superinduced colour be surrounded by the others, this line will return upon itself, and thus constitute the outline of a visible figure. But although we claim for sight the power to perceive extension, it does not necessarily follow that this perception takes place without synthesis, or that the visual extension indicates, at once, the tactual. Visible figure as well as tactile may be resolvable,

XLV.

ALL the vague ſorts, combinations, quantities, degrees, and diſpoſitions of Light

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according to Mr. Herbert Spencer's analysis, into figure, and "figure into relative magnitudes, magnitude into relative positions, and all positions may be finally reduced to positions of subject and object." If we admit the law of visible direction, we shall be able to account for the whole operation. Sir David Brewster explains this law as follows: "The impression of a ray of light upon the retina, whatever be the angle of its incidence, gives the sensation of having proceeded in a direct perpendicular to the retina, a direction, as will afterwards be seen, coinciding nearly with the real direction of the hole from which it issues" (a cone of rays being admitted through a point pricked in a piece of paper). . "The law of vision for visual *objects* is entirely different from that of points. . . When the object is a *lineal* space or *superficies*, only one point of it is seen single and distinct, the two eyes converging their optic axes on every point of it in succession." (Life of Sir Isaac Newton, chap. x.) It seems probable, therefore, that the perception of extension is a composite connexion of states and Colours, would upon the firſt perception thereof be conſidered in themſelves only, as a new ſet of ſenſations and Ideas. As they

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of consciousness, having for its elements the impressions of coincidence in time and adjacency in space, ascertained by a serial recognition of the intermediate points between the boundaries. Without giving assent to Immanuel Fichte's notion, that we are conscious of ourselves as *space-existences*, we may admit that our *a priori* ideas of space are afterwards "still further developed, and more accurately defined by the consciousness of our own bodily motions, motions of which the soul becomes cognisant as something pertaining to itself, and by means of which it apprehends itself as a being operating in space." (Morell's *Fichte's Mental Philosophy*, chap. v.) Visible extension becomes associated with actual magnitude through experience, as we elsewhere show.—See Brown *On the Mind*, lectures XXVIII. and XXIX. Stewart, *Elements of the Philosophy of the Human Mind*, vol. I. chap. 5, part II. sect. I. Dr. John Young, *Lectures on Intellectual Philosophy*, p. 116. Sir William Hamilton, *Lectures on Metaphysics*, vol. II. lecture XXVII. p. 165. *Dissertations*, p. 861. Bain, *The Senses and the Intellect*, book II. chap. I. p. 363-369. Herbert Spencer, *Principles* are wholly new and unknown, a man born blind[59] would not, at first sight, give them the names of things formerly known and

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of Psychology, p. 227 et seq. Bailey's *Review*, chap. IV. Whewell, *Philosophy of the Inductive Sciences*, vol. I. p. 302.

The question whether we can see *solid figures* intuitively, which has long formed a matter of speculation, has to a large extent been solved by Mr. Wheatstone. By means of an instrument which he calls a Pseudoscope, he has succeeded in transferring the image that is normally formed on one retina to the other, and thus obtains, as he expresses it, "a glance into another visible world, in which external objects and our internal perceptions have no longer their habitual relation with each other." The result is what Wheatstone designates "conversion of relief." The cameo becomes an intaglio; the inside of a cup presents an apparently convex surface; a small terrestrial globe, on the other hand, becomes a concave hemisphere; a bust is transformed into a hollow mask. But the circumstance which more particularly concerns us is, that "the natural appearance of the object continues to intrude itself, when sometimes suddenly, at other times gradually, the converse occupies its place." Justly does the discoverer add, "I know nothing

Cf. Essay, sect. 41, & various other passages in which the experience of the born
when they first receive sight, is inferred.

perceived by his Touch. But, after ſome experience, he would perceive bo their connexion with tangible things, and would,

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more wonderful among the phenomena of perception, than the spontaneous successive occurrence of these two very different ideas in the mind, *while all external circumstances remain the same.*" But this is not the only effect produced by this instructive and skilfully devised instrument. If there be distinct objects under inspection, an inversion of *distance* and *position* is the result, while there is no metamorphosis of the individual shapes. This transition too is gradual. While the principle of the simple stereoscope somewhat favours the supposition of a direct inference of figure from sight alone, these revelations lead to an opposite opinion, and clearly show that the inclination of the axes of the eyes and the diversity between the pictures delineated on each organ, do not *alone* regulate our knowledge of these things, but that it is more or less dependent upon our previous acquaintance with them, through touch. See *Philosophical Transactions for* 1852; *The Bakerian Lecture*, by Charles Wheatstone, F.R.S.; also, the *Edinburgh Review*, No. 220 (Oct. 1858), Article v. *Binocular Vision*; Bain, *The Senses and the Intellect*, p. 377 et seq.—Ed.

e. mediately, or through suggestion, but not by the immediate percep
ved in his original experience in seeing.

therefore, conſider them as ſigns, and give them (as is uſual in other caſes) the ſame names with the things ſignified.

XLVI.

MORE and leſs, greater and ſmaller, Extent, Proportion, Interval are all found in time, as in ſpace, but it will not therefore follow, that theſe are homogeneous quantities. No more will it follow from the attribution of common names, that viſible Ideas are homogeneous with thoſe of feeling. It is true, that terms denoting tangible Extenſion, Figure, Location, Motion, and the like, are alſo applied to denote the quantity, relation, and order of the proper viſible Objects or Ideas of ſight. But this proceeds only from experience and analogy. There is a *higher* and *lower* in the notes of muſic; Men ſpeak in a high or a low key. And this, it is plain, is no more than metaphor or analogy; ſo likewiſe to expreſs the order of viſible Ideas, the words *ſituation*, *high* and *low*, *up* and *down*, are made uſe of, and this ſenſe, when ſo applied, is analogical.

XLVII.

BUT in the caſe of Viſion, we do not reſt in a ſuppoſed analogy between different and heterogeneous natures. We ſuppoſe an identity of nature, or one and the ſame object common to both ſenſes. And this miſtake we are led into; foraſmuch as the various motions of the head, upwards and downwards, to the right and to the left, being attended with a diverſity in the viſible Ideas, it cometh to paſs, that thoſe motions and ſituations of the head, which in truth are tangible, do confer their own attributes and appellations on viſible Ideas, wherewith they are connected, and which by that means come to be termed high and low, right and left, and to be marked by other names betokening the modes of poſition,[61]* which, antecedently to ſuch experienced connexion, would not have been attributed to them, at leaſt not in the primary and literal ſenſe.

XLVIII.

FROM hence we may ſee, how the mind is enabled to diſcern by ſight the ſituation [62] of diſtant objects.† Thoſe immediate objects whoſe mutual reſpect and order come to be expreſſed by terms relative to

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[61] * [Theory of Vision, Sect. xciv] (Fraser gives 99)–Auth

† "When the mind neglects the sign and passes on to the thing signified," urges Mr. Bailey, "it is apt to fancy, not, as Berkeley's theory requires, that it perceives the suggested objects with *the sense actually in exercise*, but that *it perceives them with the sense to which the conceptions belong*," in support of which statement he adduces many examples. Notwithstanding the ability with which Mr. Bailey usually distinguishes between things which differ, I do not think he has in this case done so. It is certainly true that when an absent object is suggested to our imagination, it is mirrored forth

Sect. 48-53 treat of our visual discernment of Situation by suggestion, &
compared with sect. 88-119 in the Essay, which correspond to them.

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in the organ through which it originally became known; but this is not a parallel case. We are now considering, not an object absent from sense, but one present to it; it is not, therefore, the *object* which has to be suggested, but certain *relations* which this object bears to ourselves and to other things, as its *magnitude*, *distance*, and *tactile properties.* Concerning these, Berkeley declares that our judgments give us information by rapid inferences, based on experience; just as we gather the meaning of a writer from the words he employs. Mr. Bailey's real difficulty appears to be, that the visual signs do not bring the *tactual appearances* vividly to our recollection, as he seems to think Berkeley's theory requires, but are sufficient in *themselves* to guide us to a correct knowledge of the size and position of objects. When we look along an avenue, the trees that are furthest from us appear to be in close proximity, and when we correct this notion, and judge them to be separated by a greater space than seems to divide them, we recall, not the tangible space, but the visible space which we saw intervening, when we regarded them from a different point of view. Do we not therefore, we are asked, judge of distance directly by the visible appearance, and not mediately through tangible imtangible place, being connected with the real objects of touch, what we ſay and judge

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pressions? We admit, in reply, that we do pass at once from visible signs to the things signified, but surely this does not disprove Berkeley's affirmations with regard to the *genesis* of our ideas. When we begin to learn a foreign language we have to translate the words into our native tongue, before we can ascertain the significance of the passage; but when we have acquired greater proficiency in this language, we pass at once from the words to the meaning of the writer, and begin to think through the medium of this new vocabulary. In like manner, visual signs acquire their significance at first from a comparison with tactual signs, but afterwards the process by which we arrive at our conclusions becomes greatly expedited. The mathematician must commence by working out his problem step by step, but after a little practice, when similar formulæ are presented to him, he no longer follows the same tedious process, but can give a solution by a few steps. After the chemist has analyzed a substance, and has become acquainted with its composition, he need not repeat this investigation when the substance is again brought forward, but can tell you *at once* what are its component parts. Does he, then, judge *intuitively*, from its appearances, what are its elements of the one, we ſay and judge of the other, transferring our thought or apprehenſion

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or properties? Do you maintain that his sight is gifted with the power to inform him of the nature of bodies, because he tells you all about them by merely looking at them? You surely are aware that he is speaking from *experience*, and that he has *acquired* his power from careful research. So is it with sight. When we say that we see a body is round and five feet distant from us, we are not basing our assertions upon the intuitive information of sight, but are drawing inferences from the known relations subsisting between visual appearances and their standards of touch. We are uttering not an *intuitive*, but an *acquired* judgment. Mr. Bailey supposes that it may be objected to his views, that we speak of a bar of iron as *looking* heavy, and a fire as *looking* hot, and he tries to obviate these objections by telling us that the phrases are *Elliptical;* their real meaning being, that the iron would prove heavy if we were to raise it, and the fire hot if we were to approach or touch it. Surely this is a full admission of Berkeley's opinions, and proves that when we say a ball *looks* round, we mean that it would feel so, if we were to take it in our hands; or if we assert that a mountain *looks* two miles off, we intend by this, that we must pass over a certain space of from the ſigns to the things ſignified, as it is uſual, in hearing or reading a diſcourſe, to overlook the ſounds or letters, and inſtantly paſs on to the meaning.[65]

XLIX.

BUT there is a great difficulty relating to the ſituation of objects, as perceived by ſight.* For ſince the pencils of rays

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ground, measured by a certain amount of tangible distance, before we can reach it. See *Review of Berkeley's Theory of Vision*, page 96; and Mr. John Stuart Mill's criticisms upon it, in his *Dissertations and Discussions*, vol ii. page 84.—Ed.

* Many solutions have been attempted of this difficulty. I select some of the latest. Dr. Whewell says:—"We have no notion of upright or inverted, except that which is founded on experience, and all our experience must have taught us that such a sensible image belongs to a man who is in an upright position." This is tantamount to saying that visual impressions are corrected by tactual, but he afterwards falls back upon Berkeley's views and

·[Minute Philosopher, Dial. IV. sect. 12]—Author.

iſſuing from any luminous object do, after their paſſage through the pupil and their refraction by the cryſtalline, delineate inverted pictures in the *retina*, which pictures are ſuppoſed the immediate proper objects of ſight, how comes it to paſs, that the objects whereof the pictures are thus inverted do yet ſeem erect and in their natural ſituation? For the objects not being perceived otherwiſe than by their pictures, it ſhould follow,

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affirms, "It is sufficient explanation to say, that we do not *see* the image on the retina, but see by means of it." (*Scientific Ideas*, book II. ch. 2, sect. iii. § 7.)

Sir David Brewster, after commenting on the unsatisfactory nature of the explanations that have been offered, accounts for the anomaly by the law of visual direction. Fichte, embracing the same notion, remarks :—"The rays of light which come from above fall on the lower part of the retina, while those which come from below fall on the upper part of it. Those coming from the right fall on the left side; those from the left on the right. But, for this very reason, they must be localised by the perceiving consciousness, accordthat as theſe are inverted, thoſe ſhould ſeem ſo too. But this difficulty, which is inexplicable on all the received principles and theories, admits of a moſt natural ſolution, if it be conſidered that the *retina*, cryſtalline, pupil, rays croſſing refracted and reunited in diſtinct images, correſpondent and ſimilar to the outward objects, are things altogether of a tangible nature.

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ing to the direction to which they come, and consequently must be seen *erect*, not inverted." (Sir David Brewster, *Life of Sir Isaac Newton*, ch. x.; Morell's *Fichte's Mental Philosophy*, ch. vi.) Mr. Bain connects the correction rather with the motion of the eye, than its perceptions in a state of rest. " An object seems to us to be up or down according as we raise or lower the pupil of the eye in order to see it; the very motion of up and down is derived from our feelings of movement, and not at all from the optical image formed on the back of the eye. Wherever this image was formed, and however it lay, we should consider that to be the top of the object which we had to raise our eyes or our body to reach."—*The Senses and the Intellect*, chap II. p. 233.—ED.

L.

THE pictures, ſo called, being formed by the radious pencils, after their above mentioned croſſing and refraction, are not ſo truly pictures as images or figures or projections, tangible figures, projected by tangible rays on a tangible *retina*, which are ſo far from being the proper objects of ſight, that they are not at all perceived thereby, being by nature altogether of the tangible kind, and apprehended by the Imagination alone, when we ſuppoſe them actually taken in by the eye.* Theſe tangible images on the *retina* have ſome reſemblance unto the tangible objects from which the rays go forth; and in reſpect of thoſe objects I grant they are inverted. But then, I deny that they are or can be the proper immediate objects of ſight. This, indeed, is vulgarly ſuppoſed by the writers of optics: but it is a vulgar error; which being removed, the forementioned difficulty is removed with it, and admits a juſt and full ſolution, being ſhown to ariſe from a miſtake.

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* There appears to be some uncertainty as to the position of the daguerreotype image which is generally supposed to be formed on the retina. M. Mariotte attributes to the *choroid* coat, situated immediately below the retina, the office of receiving the picture, and his opinion seems to be supported by important evidence for which I must refer you to Sir D. Brewster's *Optics*. (Part III. chap. xxxv. 67.) We are there informed, also, that M. Lehot has attempted to prove that an image of

LI.

PICTURES therefore may be underſtood in a twofold ſenſe, or as two kinds

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three dimensions is formed in the *vitreous humour*, and that the impression is transmitted to the brain by small filaments of nerve extending from the retina. The reply to this theory is, that it would render the adjustment of the eye unnecessary, and that it is opposed to the fact that we do not see two points at different distances, when we have a distinct perception of any one of them.—Ed.

quite diſſimilar and heterogeneous, the one conſiſting of light, ſhade, and colours; the other not properly pictures, but images projected on the *retina*. Accordingly, for diſtinction, I ſhall call thoſe *pictures*, and theſe *images*. The former are viſible and the peculiar objects of ſight. The latter are ſo far otherwiſe, that a man blind from his birth may perfectly imagine, underſtand, and comprehend them. And here it may not be amiſs to obſerve, that figures and motions which cannot be actually felt by us, but only imagined, may nevertheleſs be eſteemed tangible Ideas, forasmuch as they are of the ſame kind with the objects of Touch, and as the Imagination drew them from that ſenſe.

LII.

THROUGHOUT this whole affair, the Mind is wonderfully apt to be deluded by the ſudden ſuggeſtions of Fancy, which it confounds with the perceptions of ſenſe, and is prone to miſtake a cloſe and habitual connexion between the moſt diſtinct and different things for an identity of Nature.[*64] The ſolution of this knot about inverted images ſeems the principal point in the whole Optic Theory, the moſt difficult perhaps to comprehend, but the moſt deſerving of our attention, and, when rightly underſtood, the ſureſt way to lead the mind into a thorough knowledge of the true nature of Viſion.

LIII.

IT is to be noted of theſe inverted images on the *retina*, that although they are in kind altogether different from the proper objects of ſight or pictures, they may nevertheleſs be proportioned to them; as indeed the moſt different and heterogeneous things in nature may, for all that, have analogy, and be proportioned each to

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[64*] [Theory of Vision, sect. cxliv.]—Author. In truth
called "images", or concurrent rays on the retina, are not themselves what
they are merely organic conditions of visual consciousness by means of
ich we see.

other. And although thoſe images, when the diſtance is given, ſhould be ſimply as the radiating ſurfaces; and although it be conſequently allowed that the pictures are in that caſe proportional to thoſe radiating ſurfaces, or the tangible real magnitude of things; yet it will not thence follow, that in common ſight we perceive or judge of thoſe tangible real magnitudes ſimply by the viſible magnitudes of the pictures; for therein the diſtance is not given, tangible objects being placed at various diſtances; and the diameters of the images, to which images the pictures are proportional, are inverſely as thoſe diſtances, which diſtances are not immediately perceived by ſight.[*65] And admitting they were, it is nevertheleſs certain, that the mind, in apprehending the magnitudes of tangible objects of ſight, doth not compute them by means of the inverſe proportion of the diſtances, and the direct proportion of the pictures. That no

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[65*] [Theory of Vision, sect. ii.]—Author.

ſuch inference or reaſoning attends the common act of ſeeing, every one's experience may inform him.

LIV.

TO know how we perceive or apprehend by ſight the real magnitude* 66 of tangi-

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* The ingenious and interesting experiments of Mr. Wheatstone furnish us with the means of ascertaining how we judge of the *magnitude* of things, thus removing the question beyond the domain of conjecture, and enabling us to refer to carefully observed *facts* instead of cleverly conceived theories. The instrument employed by Mr. Wheatstone is a modification of his reflecting stereoscope. "Its principal object is to cause the binocular pictures to coincide with any inclination of the optic axes, while their magnitudes on the retina remain the same, or *vice versâ*." The results of his investigations as far as regards *magnitude* he thus sums up :—"The perceived magnitude of an object diminishes as the inclination of the axes becomes greater, while the distance remains the same ; and it increases, when the inclination of the axes remains the same, while the distance diminishes. When both these conditions vary

Sect. 54-61 treat of the (mediate) perception of Magnitude by suggestion. Cf. s
-87 in the Essay. See record of experiments by Wheatstone, Philosophical Tr
tions (1852) in explanation of the visual discernment of Magnitude

ble objects, we muſt conſider the immediate viſible objects, and their properties or accidents. Theſe immediate objects are the pictures. Theſe pictures are ſome more

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inversely, as they do in ordinary vision when the distance of an object changes, the perceived magnitude remains the same."

When the object is of too large dimensions to be perceived at one view, the magnitude is determined by the range or sweep of the eye in traversing its whole extent, or by the relative size of the portion perceived at one glance. "We see a rainbow," says Mr. Bain, "spanning one-third of the heavens; we see a cloud encircling the sky; we appreciate the dimensions of a picture on the wall as compared with other pictures beside it. The different degrees of movement and tension of the muscles that make the sweep are distinctly felt, and we set down one sweep as more or less than another. We also acquire by repetition standards of comparison for expanses in general, as we acquire standards of weight in the sensibility of the arms." See Mr. Wheatstone on the Physiology of Vision, *Philosophical Transactions*, 1852, sect. 17; Bain, *The Senses and the Intellect*, p. 245 and 376; Buffon, *Histoire de l'Homme: Du sens de la Vue;* Young's *Lectures on Intellectual Philosophy*, Lecture xiv. —Ed.

lively, others more faint, ſome are higher, others are lower in their own order or peculiar location, which, though in truth quite diſtinct, and altogether different from that of tangible objects, hath nevertheleſs a relation and connexion with it, and thence comes to be ſignified by the ſame terms, *high*, *low*, and ſo forth. Now by the greatneſs of the pictures, their faintneſs and their ſituation, we perceive the magnitude of tangible objects, the greater, the fainter, and the upper pictures ſuggeſting the greater tangible magnitude.

LV.

FOR the better explication of this point, we may ſuppoſe a diaphanous plain erected near the eye, perpendicular to the horizon, and divided into ſmall equal ſquares. A ſtraight line from the eye to the utmoſt limit of the horizon, paſſing through this diaphanous plain, will mark a certain point or height to which the horizontal plain, as projected or repreſented in the perpendicular plain would riſe. The eye ſees all the parts and objects in the horizontal plain, through certain correſponding ſquares of the perpendicular diaphanous plain. Thoſe that occupy moſt ſquares have a greater viſible extenſion, which is proportional to the ſquares. But the tangible magnitudes of objects are not judged proportional thereto. For thoſe that are ſeen through the upper ſquares ſhall appear vaſtly bigger than thoſe ſeen through the lower ſquares, though occupying the ſame, or a much greater number of thoſe equal ſquares in the diaphanous plain.

LVI.

RAYS iſſuing from every point of each part or object in the horizontal plain, through the diaphanous plain to the eye, do to the imagination exhibit an image of the horizontal plain and all its parts, delineated in the diaphanous plain, and occupying the ſquares thereof to a certain height marked out by a right line reaching from the eye to the fartheſt limit of the horizon. A line drawn through the foremoſt height or mark upon the diaphanous plain, and parallel to the horizon, I call the horizontal line. Every ſquare contains an image of ſome correſponding part of the horizontal plain. And this entire image we may call the horizontal image, and the picture anſwering to it the horizontal picture. In which repreſentation, the upper images ſuggeſt much greater magnitudes than the lower. And theſe images ſuggeſting the greater magnitudes are alſo fainter as well as upper. Whence it follows, that faintneſs and ſituation concur with viſible magnitude to ſuggeſt tangible magnitude. For the truth of all which I appeal to the experience of the reader, who ſhall add his own reflexion to what I have written.

LVII.

IT is true, this diaphanous plain, and the images ſuppoſed to be projected thereon, are altogether of a tangible nature[67];[*] but then there are pictures relative to thoſe images[68]; and thoſe pictures have an order among themſelves, anſwering to the ſituation of the images, in reſpect of which order they are ſaid to be higher and lower[69].[†] Theſe pictures alſo are more or leſs faint, they, and not the images, being in truth the viſible objects. Therefore what hath been ſaid of the images muſt in ſtrictneſs be underſtood of the correſponding pictures, whoſe faintneſs, ſituation, and magnitude being immediately perceived by ſight do all three concur in ſuggeſting the magnitude of tangible objects, and this only by an experienced connexion.

LVIII.

THE magnitude of the picture will perhaps be thought by ſome to have a neceſſary connexion with that of the tangible object, or (if not confounded with it) to be at leaſt the ſole means of ſuggeſting it. But ſo far is this from being true, that of two viſible pictures equally large, the one, being fainter and upper, ſhall ſuggeſt an hundred times greater tangible magnitude than the other,[70]* which is an evident proof that we do not judge of the tangible magnitude merely by the viſible, but that our judgment or apprehenſion is to be rated rather by other things, which yet, not being conceived to have ſo much reſemblance with tangible magnitude, may therefore be overlooked.

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[67][*] [Theory of Vision, clviii.]—*Author.*

[69][†] [Supra, sect. xlvi.]—*Author.*

sect. 51, for the distinction between pictures & images.

LIX.

IT is farther to be obſerved, that beſide this magnitude, ſituation, and faintneſs of the pictures, our prænotions concerning the kind, ſize, ſhape, and nature of things do concur in ſuggeſting to us their tangible magnitudes.* Thus, for inſtance, a picture equally great, equally faint, and in the very ſame ſituation, ſhall in the ſhape of a man ſuggeſt a leſſer magnitude than it would in the ſhape of a tower.

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[70]* [Theory of Vision, sect. lxxviii.]—Author.

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* Adam Smith corroborates this statement, and illustrates the influence of our prænotions in guiding us to a correct judgment of distance. "When I hold up my finger, however, before my eye, it appears to cover the greater part of the visible chamber in which I am sitting. It should therefore appear as large as the greater part of that visible chamber. But because I know that the tangible finger bears but a small proportion to the greater part of the tangible chamber, I am apt to fancy that the visible finger bears but a like proportion to the greater part of the visible chamber. My judgment corrects my eye-sight, and in my fancy reduces the visible object, which represents the little tangible one, below its real visible dimensions; and, on the contrary, it augments the visible object which represents the great tangible one a good deal beyond those dimensions." . . "The chair which now stands at the farther end of the room, I am apt to imagine, appears to my eye as large as it did when it stood close by me, when it was seen under angles at least four times larger than those under which it is seen at present, and when it must have occupied at least sixteen times that portion which it occupies at present, of the visible plain or surface which

LX.

WHERE the kind, faintneſs, and ſituation of the horizontal pictures7/ are given,[*] the ſuggeſted tangible magnitude will be as the viſible. The diſtances and magnitudes, that we have been accuſtomed to meaſure by experience of touch, lying in the horizontal plain, it thence

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is now before my eyes. But as I know that the magnitude of the tangible and represented chair, the principal object of my attention, is the same in both situations, I ascribe to the visible and representing chair (though now reduced to less than the sixteenth part of its former dimensions) a steadiness of appearance, which belongs not in any respect to it, but altogether to the tangible and represented one." *Works,* vol. v. page 371 *et seq.*—Ed.

7/[*] [Supra, sect. lvi.]—Author.

comes to paſs, that ſituations of the horizontal pictures ſuggeſt the tangible magnitudes, which are not in like manner ſuggeſted by vertical pictures. And it is to be noted that, as an object gradually aſcends from the horizon towards the zenith, our judgment concerning its tangible magnitude comes by degrees to depend more entirely on its viſible magnitude. For the faintneſs is leſſened as the quantity of intercepted air and vapours is diminiſhed. And, as the object riſeth, the eye of the spectator is alſo raiſed above the horizon: ſo that the two concurring circumſtances of faintneſs and horizontal ſituation ceaſing to influence the ſuggeſtion of tangible magnitudes, this ſame ſuggeſtion or judgment doth, in proportion thereto, become the sole effect of the viſible magnitude and the prænotions. But it is evident, that if ſeveral things (for instance, the faintneſs, situation, and viſible magnitude) concur to enlarge an idea, upon the gradual omiſſion of ſome of thoſe things, the idea will be gradually leſſened.

This is the caſe of the moon,[72]* when ſhe aſcends above the horizon, and gradually diminiſheth her apparent dimenſion, as her altitude increaſeth.

LXI.

IT is natural for mathematicians to regard the viſual angle and the apparent magnitude as the ſole or principal means of our apprehending the tangible magnitude of objects. But it is plain, from what hath been premiſed, that our apprehenſion is much influenced by other things,[73]† which have no ſimilitude or neceſſary connexion therewith.

LXII.

AND theſe ſame means, which ſuggeſt the magnitude of tangible things, do alſo ſuggeſt their diſtance,[74]‡ and in the ſame manner, that is to ſay, by experience alone, and not by any neceſſary connexion or geometrical inference.* The faintneſs therefore, and vividneſs, the upper and lower ſituations, together with the viſible ſize of

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[72] * [Theory of Vision, sect. lxxiii.]—*Author.*

[73] † [Supra, sect. lviii.]—*Author.*

[74] ‡ [Theory of Vision, sect. lxxvii.]—*Author.* The invis
of real Distance, & the Theory of the suggestion of the distances of objects by
ce or custom, are extensively treated in sect. 2-51 of the Essay towards a
ory of Vision. Sect. 77 refers to Distance in connexion with Magnitude

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* Do we judge of the distance of objects from ourselves, and their relative distances from each other, intuitively, by the innate peculiarity of our mental constitution, or from the data of experience? The former opinion was at one time held, but it has since been contradicted by most philosophers. Berkeley was anticipated on this subject by Malebranche and Locke, and was probably greatly influenced by both these psychologists. One part of the observations of Malebranche on this point has been contradicted by our author, namely, that contained in the following statement made by the French philosopher, which attributes our perception of distance in a measure to natural geometry:—"Le premier, le plus universel, et quelquefois le plus sûr moyen que nous ayons pour juger de la distance des objets, c'est l'angle que font les rayons de nos yeux, duquel l'objet en est le sommet, c'est-à-dire, duquel l'objet est le point où ces rayons se rencontrent." Now, it is apparent that if we are not immediately cognisant of distance, we can only infer it from something that we do immediately perceive. But our consciousness gives us no intimation of the existence of lines and angles, therefore it is clear

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that they cannot furnish us with the required information : their existence has merely been assumed by opticians to explain the connexion between external objects and our organs of sight. In the same section as that from which the above quotation is made, Malebranche speaks of the disposition of our eyes, according as these angles vary, as another means by which we ascertain distance. The existence of lines external to us is a mere supposition, but of the disposition of our eyes we are made aware by the nerves united to our muscles, which contract and turn our eyes inwards as the proximity of the objects varies; and this forms an important aid in guiding our judgments, as Professor Wheatstone has made clear. The result of his investigations he gives in the following words :—" It is the prevalent opinion that the sensation which accompanies the inclination of the optic axes immediately suggests distance, and that the perceived magnitude of an object is a judgment arising from our consciousness of its distance and of the magnitude of its picture on the retina. From the experiments I have brought forward, it rather appears to me that what the sensation which is connected with the convergences of the axes immediately suggests, is a corthe pictures, and our prœnotions concerning the ſhape and kind of tangible

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rection of the retinal magnitude to make it agree with the real magnitude of the objects, and that *distance*, instead of being a simple perception, is a judgment arising from a comparison of the retinal and perceived magnitudes." ("I call," he adds, "the real or objective magnitude, the magnitude of the object itself; the magnitude of the picture on the retina, the retinal magnitude; and the magnitude we estimate the object to be from its retinal magnitude and the inclination of the optic axes conjointly, I name the perceived magnitude.")

The second adaptation mentioned by Malebranche, is the alteration in the conformation of the eye itself, with reference to which, more recent observations affirm that it consists in a variation in the position of the crystalline lens.

On these two changes Mr. Bain remarks:—"There is a double adaptation of the eye to *distance*, namely, a change in the ball, for near objects, and an alteration in the direction of the two eyes, or in the parallelism of the axes, for all distances, near and far. These adaptations are undoubtedly muscular; that is, they consist in the greater or less contraction of particular muscles. Now the contraction of muscles in any part whatever yields a distinct objects, are the true medium by which we apprehend the various degrees of

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feeling; we are conscious not only of the fact of tension, but of different degrees of tension... A far object exalts the muscular feeling of the eye, and is a source of lively pleasure: the pleasure of muscular tension in muscles peculiarly sensitive. The principal effort for a distant view is concentrated in the two adductor muscles of the two eyes, which have distinct nerves supplied to them. By these, the axes of the eye are drawn from a converging to a parallel position. The exercise of the adductor muscles is part of the pleasure derived from the outside prospect after in-door confinement." *The Senses and the Intellect*, chap. ii. (p. 243.)

The remaining suggestive facts to be noticed, as guiding us to an accurate judgment of distance, are, the variation in the size of the object; the distinctness of its parts and vividness of the impression; an observation of the intervening objects, whose distance is otherwise known; and our previous knowledge of their magnitude, which we compare with their apparent size. For confirmation and extension of these remarks, see Reid's *Works*, chap. vi. sect. xxii.; Malebranche, *Recherche sur la Vérité*, livre i. chap. ix. sect. 3; Locke's *Essay*, book ii. chap. xiii.; Brown, tangible diſtance[75] Which follows from what hath been premiſed, and will indeed

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Lectures on the Philosophy of the Mind, lecture xxix.; Young, *Lectures on Intellectual Philosophy*, lectures xiv. xv.; Buffon, *Histoire de l'Homme, Du sens de la Vue;* Hartley's *Observations on Man*, sect. iv. prop. 20; Adam Smith's *Works*, vol. v. page 371 et seq.; Wheatstone, *On the Physiology of Vision*, Philosophical Transactions, 1852, sect. 17; Whewell's *Inductive Philosophy*, book iv. chap. ii. sect. i.; Sir William Hamilton, *Lectures on Metaphysics*, lecture xxviii.

Having stated the generally received opinion, I must bring forward and consider the objections that have been urged against it. It was opposed by Condillac, in his *Essai sur l'origine des Connaissances Humaines*, première partie, sect. 16. But, in an after work, *Traité des Sensations*, it appears that he became a convert to Berkeley's views. I shall, therefore, pass him by, and only notice the recent assailant of this notion, Mr. Bailey, who has evinced much acuteness in what he has written, and consequently demands a careful attention.

Mr. Bailey has noticed, at the beginning of his *Review*, an important distinction, which we should bear in mind; namely, that the question whether things are perceived to be at *any distance*

Note that Berkeley's problem refers to tangible or real distance & not to
he signs.

be evident to whoever conſiders that thoſe viſual angles, with their arches or ſubtenſes,

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by sight, must not be confused with the question whether they are perceived to be at *different distances.* If we have an intuitive conviction of the existence of the *not-me*, things must primarily be known to be *not-of-ourselves*, i.e. *out-of-ourselves.* I have elsewhere expressed a belief that this is the case, and intend, therefore, to deal now solely with the present *quæsitum.* At page 95 of the above-mentioned work, our objector gives a convenient summary of what he considers to be the weak points in Berkeley's argument. They are,

1. "That he takes the point in question for granted.

2. "That the visual perception of distance, which he pronounces to be impossible, is quite as conceivable and explicable as the tactual perception into which he resolves it.

3. "That if we originally saw all objects as mere portions of a party-coloured plane, the touch could not enable us to *see* them otherwise, in the way represented or in any other way.

4. "That the doctrine which resolves our visual perceptions of distance into suggestions of tangible spaces, is altogether at variance with our consciousness, and with the acknowledged laws of the human mind."

are neither perceived by ſight nor by experience of any other ſenſe. Whereas it is

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To this I would make the following counter-statements.

a. Berkeley affirms that the nature of the organ of sight precludes a *direct* perception of distance; for all objects are projected on the retina, on a flat surface, by single points, which can have no outness of position among themselves. The separation of *objects* from each other is indicated by the intervals of space between the coloured portions, but there is nothing to show what space lies between ourselves and them. Nor does he rely alone on this physical fact, which may be objected to as beyond the sphere of consciousness: he arrives at the same conclusion by analysing our percepts into their original constituents. He acknowledges that it is very difficult to detach our notions derived from touch from those communicated by sight, with which they are closely interwoven, but he appeals to the fact that our judgments of distance and magnitude are modified by various circumstances, as the clearness of the atmosphere, our prænotions of size, &c. For instance, in sect. lviii. we find: "Of two visible pictures equally large, the one, being fainter and upper, shall suggest an hundred times greater tangible magnitude than the other: which is an certain that the pictures, with their magnitudes, ſituations, and degrees of faintneſs, are alone the proper objects of ſight, ſo

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evident proof that we do not judge of the tangible magnitude merely by the visible." So again, in 63, he tells us *we need only reflect on what we see*, to be assured that the less the pictures are, the fainter they are, and the higher, by so much the greater will the distance seem to be." And so he goes on to interrogate experience, which must be the final court of appeal in all these cases.

b. As to Mr. Bailey's second charge, I must refer my readers to the text for evidence that the muscular effort in seeing is set forth as one of the means by which we obtain a visual perception of distance, in perfect harmony with Mr. Bailey's statement :—"There is evidently no reason for supposing that different muscular dispositions of the eyes are not accompanied by a direct perception of different distances, as well as muscular dispositions of the arm." But we must learn to associate these dispositions of the eyes with tactual distances, or they could prove of no service, for what does distance mean, for us, but the amount of muscular effort that must be put forth, in order that we may reach, or come in contact with, or be able to touch, the that, whatever is perceived 76 by ſight, muſt be perceived by means thereof. To which perception the prænotions alſo gained by

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objects before us? Our standards of measurement of distance are formed from parts of our bodies, as the number of *footsteps* that lie between the objects whose relative position we wish to define.

c. As to Mr. Bailey's third statement, I can only say that it is founded on a misrepresentation. Our author nowhere asserts that we *see* distance, nor does he imply that an "internal judgment or inference will absolutely be regarded as external itself, or rather, be converted into the perception of an external object." There may be ambiguity in isolated passages, but a careful perusal of the whole will make it evident that he attributes our visual ideas of distance to rapid inferences drawn from the appearance of things, as their size, brightness, &c.

d. I see no reason for concurring in the opinion that Berkeley's doctrine is at variance with consciousness, and I have quoted many weighty authorities as evidence that it is in harmony with the laws of our mind. See Bailey's *Review of Berkeley's Theory of Vision*, sect. iv.; John Stuart Mill, *Dissertations and Discussions*, Article on the same.—Ed.

e. perceived mediately, or through suggestion.

experience of touch, or of ſight and touch conjointly, do contribute.

LXIII.

AND indeed we need only reflect on what we ſee, to be aſſured that the leſs the pictures are, the fainter they are, and the higher (provided ſtill they are beneath the horizontal[*][77] line or its picture), by ſo much the greater will the diſtance ſeem to be.[78][†] And this upper ſituation of

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[77] [Supra, sect. 56]—Author.

[78] [*] [Theory of Vision, sect. iii.]—Author.

[†] That our notions of distance are regulated by these various modifying circumstances, is evident from the artifices necessary to convey these notions in pictorial representations. If an artist, in delineating a group of cattle, were to make a cow much smaller than the rest, and at the same time to paint it with the same distinctness and vividness as the others, we should conclude it to be a *calf*, but if he added obscurity and faintness to smallness of outline, we should judge it to be a cow further removed than the rest.

"When we judge by the eye of the remoteness of any object, we judge by signs; the signs being no the picture, is in ſtrictneſs what muſt be underſtood when, after a popular manner of ſpeech, the eye is ſaid to perceive fields, lakes, and the like, interjacent[*][78] between it and the diſtant object, the pictures correſponding to them being only perceived to be lower than that of the object.[79][†] Now it is evident that none of theſe things have in their own nature any neceſſary connexion with the various degrees of diſtance. It will alſo appear upon a little reflexion, that ſundry circumſtances of ſhape, colour, and kind, do influence our judgments or apprehenſions

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other than those which painters use when they wish to represent the difference between a near and a remote object. We judge an object to be more distant from us by the diminution of its apparent magnitude, that is, by *linear perspective*, or by that dimness or faintness of colour and outline which generally increases with the distance; in other words, by aërial perspective."—*John Stuart Mill, Dissertations and Discussions*, vol. ii. p. 87. (*e.*) —Ed.

[78][*] [Theory of Vision, sect. iii] [79][†] [Supra, sect. lv]-Author.

of diſtance; all which follows from our prænotions, which are merely the effect of experience.

LXIV.

As it is natural for mathematicians to reduce things to the rule and meaſure of geometry, they are prone to ſuppoſe that the apparent magnitude hath a greater ſhare than we really find, in forming our judgment concerning the diſtance of things from the eye. And, no doubt, it would be an eaſy and ready rule to determine the apparent place of an object, if we could ſay that its diſtance was inverſely as the diameter of its apparent magnitude, and ſo judge by this alone, excluſive of every other circumſtance. But that this would be no true rule, is evident, there being certain caſes in viſion, by refracted or reflected light, wherein the diminution of the apparent magnitude is attended with an apparent diminution of diſtance.[80.]

Cf. New Theory of Vision, sect. 29.

LXV.

BUT further to ſatisfy us that our judgments or apprehenſions, either of the greatneſs or diſtance of an object, do not depend abſolutely on the apparent magnitude, we need only aſk the firſt painter we meet, who, conſidering nature rather than geometry, well knows that ſeveral other circumſtances contribute thereto: and ſince art can only deceive us as it imitates nature, we need but obſerve pieces of perſpective and landſcapes, to be able to judge of this point.

LXVI.

WHEN the object is ſo near that the interval between the pupils beareth ſome ſenſible proportion to it, the ſenſation which attends the turning or ſtraining of the eyes, in order to unite the two optic axes therein, is to be conſidered as one means of our perceiving diſtance.*[81] It muſt be owned, this ſenſation belongeth properly to the ſenſe of feeling; but as it waits upon and hath a regular connexion with diſtinct viſion of near diſtance (the nearer this, the greater that), ſo it is natural that it ſhould become a ſign thereof, and ſuggeſt it to the mind.†[82] And that it is ſo in fact, follows from that known experiment of hanging up a ring edge-wiſe to the eyes, and then endeavouring, with one eye ſhut, by a lateral motion to inſert into it the end of a ſtick; which is found more difficult to perform than with both eyes open, from the want of this means of judging by the ſenſation attending the nearer meeting or croſſing of the two optic axes.

LXVII.

TRUE it is, that the mind of man is pleaſed to obſerve in nature rules or methods, ſimple, uniform, general, and reducible to mathematics, as a means of rendering its knowledge at once eaſy and extenſive. But we muſt not, for the ſake of uniformities or analogies, depart from truth and fact, nor imagine that in all caſes the apparent place or diſtance of an object muſt be ſuggeſted by the ſame means. And indeed, it anſwers the end of viſion to ſuppoſe that the mind ſhould have certain additional means or helps, for judging more accurately of the diſtance of thoſe objects which are the neareſt, and conſequently moſt concern us.

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[81] *[Theory of Vision, sects. xvi. xvii]—*Author.*

[82] †[Supra, sect. xxxix.]—*Author.*

LXVIII.

IT is alſo to be obſerved, that when the diſtance is ſo ſmall that the breadth of the pupil bears a conſiderable proportion to it, the object appears confuſed. And this confuſion being conſtantly obſerved in poring on ſuch near objects, and increaſing as the diſtance leſſens, becomes thereby a means of ſuggeſting the place of an object.[83][*] For one idea is qualified to ſuggeſt another, merely by being often perceived with it. And if the one increaſeth either directly or inverſely as the other, various degrees of the former will ſuggeſt various degrees of the latter, by virtue of ſuch habitual connexion and proportional increaſe or diminution. And thus, the gradual changing confuſedneſs of an object may concur to form our apprehenſion of near diſtance, when we look only with one eye. And this alone may explain Dr. Barrow's difficulty, the caſe as propoſed by him regarding only one viſible point.[84][†] And when ſeveral points are conſidered, or the image ſuppoſed an extended ſurface, its increaſing confuſedneſs will, in that caſe, concur with the increaſing magnitude to diminiſh its diſtance, which will be inverſely as both.

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[83] [*] [Theory of Vision, sect. xxi.]

[84] [†] [Supra, sect. xxix.]

LXIX.

ONE experience in viſion is got by the naked eye. We apprehend or judge from this ſame experience, when we look through glaſſes. We may not, nevertheleſs, in all caſes, conclude from the one to the other, becauſe that certain circumſtances either excluded or added by the help of glaſſes, may ſometimes alter our judgments, particularly as they depend upon prænotions.

LXX.

WHAT I have here written may ſerve as a commentary on my *Eſſay towards a new Theory of Viſion*; and, I believe, will make it plain to thinking men. In an age wherein we hear ſo much of thinking and reaſoning, it may ſeem needleſs to obſerve, how uſeful and neceſſary it is to think, in order to obtain juſt and accurate notions, to diſtinguiſh things that are different, to ſpeak conſiſtently, to know even our own meaning. And yet, for want of this, we may ſee many, even in theſe days, run into perpetual blunders and paralogiſms. No friend, therefore, to truth and knowledge would lay any reſtraint or diſcouragement on thinking. There are, it muſt be owned, certain general maxims, the reſult of ages, and the collected ſenſe of thinking perſons, which ſerve inſtead of thinking for a guide or rule to the multitude, who, not caring to think for themſelves, it is fit they ſhould be conducted by the thoughts of others. But thoſe who ſet up for themſelves, thoſe who depart from the public rule, or thoſe who would reduce them to it, if they do not think, what will men think of them? As I pretend not to make any diſcoveries which another might not as well have made, who ſhould have thought it worth, by pains: ſo I muſt needs ſay, that without pains and thought no man will ever underſtand the true nature of viſion, or comprehend what I have wrote concerning it.

LXXI.

85 BEFORE I conclude, it may not be amiſs to add the following extract from the Philoſophical Tranſactions, relating to a perſon blind from his infancy, and long after made to ſee. 'When he firſt ſaw, he was ſo far from making any judgment about diſtances, that he thought all objects whatever touched his eyes* (as he

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* The expression, "*he thought all objects whatever touched his eyes*," has been the subject of much dispute. Adam Smith observes, "When the young gentleman said, that the objects which he saw touched his eyes, he certainly could not mean that they pressed upon or resisted his eyes; for the objects of sight never act upon the organ in any way that resembles pressure or resistance. He could mean no more than that they were close upon his eyes, or, to speak more properly, perhaps, that they were *in* his eyes." (*Works*, vol. v.: *Of the external senses.*) Dugald Stewart, objecting to this explanation, says, "It

ct 71 contains Berkeley's principal reference to external observation & experien
stinguished from reflection of what we are conscious of — in verification of th
Theory, & especially in verification of the principle that our power of interpret
al or tangible meaning of visual signs is due, not to an original instinct, but
ggestion of custom.

expreſſed it), as what he felt did his ſkin, and thought no objects ſo agreeable as thoſe which were ſmooth and regular, though he could form no judgment of

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does not appear to me that the impression of a *moderate* light on the *retina* is accompanied with any perception of the part of the body on which the impression is made. Where the light, indeed, is so powerful as to produce *pain*, the case comes to be different; for a sensation of *touch* is then united with the proper sensations of *sight;* and it is characteristic of all sensations of *touch* that they are accompanied with a perception of the *local situation* of their exciting causes." (Note, *Elements of the Philosophy of the Human Mind:* Appendix to part iii. chap. ii. Hamilton's edition of his *Works*, vol. iii.) Mr. Bailey accepts this gloss, and confirms it by a quotation from Bell, who asserts that the nerve of the skin is alone capable of giving the sense of contact, as the nerve of vision is confined to its proper office. (*The Hand.* p. 187, 4th edition; Bailey's *Review of the Theory of Vision*, p. 27, also p. 170 et seq.)

Mr. John Stuart Mill, after commenting on the needless controversy that has arisen on this point, judiciously remarks :—" That the objects touched him was obviously a mere supposition, which he their ſhape, or gueſs what it was in any object that was pleaſing to him. He knew not the ſhape of anything, nor any one thing from another, however different in

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made because it was with his eyes that he perceived them. From his experience of touch, perceptions of an object and contact with it were, no doubt, indissolubly associated in his mind. But he would scarcely have said that all objects seemed to touch his eyes if some of them appeared further off than others."—*Dissertations and Discussions*, vol. ii. p. 110.

A case which seems to favour yet more strongly Berkeley's views, is that of a lady born blind, who, under the care of Mr. J. Wardrop, received sight at an advanced age by means of an artificial pupil. I select the following extracts, detailing those facts which are most important :—

"The tea-cups and saucers underwent an examination : 'What are they like ?' her brother asked her. 'I don't know,' she replied ; 'they seem very queer to me ; but I can tell what they are in a minute when I touch them.' She distinguished an orange on the chimney-piece, *but could form no notion of what it was like till she touched it.*"

On the sixth day, she said in reply to an inquiry, ſhape or magnitude: but upon being told what things were, whoſe form he before knew from feeling, he would carefully obſerve them that he might know them again:

"I see a great deal, if I could only tell what I see, but surely I am very stupid."

On the seventeenth day she remarked, "All that I can say is, that I am sure, from what I do, a great change has taken place; but *I cannot describe what I feel.*"

She seemed to have the greatest difficulty in finding out the distance of any object, for when an object was held close to her eye, she would search for it by stretching her hand far beyond its position, while on other occasions she groped close to her own face for a thing far removed from her.

When the experiment was made of giving her a silver pencil-case and a large key to examine with her hands, she discriminated and knew each distinctly; but when they were placed on the table, side by side, though she distinguished each with her eye, yet she could not tell which was the pencil-case and which was the key.

Mr. Wardrop says of her powers of vision, forty-two days after the operation, "She had not yet acquired anything like an accurate knowledge of but having too many objects to learn at once, he forgot many of them: and (as he ſaid) at firſt he learned to know, and again forgot, a thouſand things in a day. Several

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distance, or of forms, and up to this period she continued very much confused with every object at which she looked." Mr. Bailey remarks upon this case: "She discerned immediately differences of colour, of size, of form, of position, of distance, facts of which some are utterly inconsistent with the Berkeleian theory, *and some in its favour.*" We leave the facts with the unprejudiced reader; let him determine for himself whether such a conclusion can be legitimately drawn. See *Philosophical Transactions for* 1826: Bailey's *Review of Berkeley's Theory of Vision*, ch. v. sect. vi.

The following cases may also be quoted, in reference to this question.

Philosophical Transactions, 1807.—Case of William Stiff, twelve years old, couched by Everard Horne, Esq. F.R.S.

"When the four corners of a white card were pointed out, and he had examined them, he seemed to know them; but when the opposite surface of the same card, which was yellow, was placed before him, he could not tell whether it had corners or not, so that he had not acquired weeks after he was couched, being deceived by pictures, he aſked which was the lying ſenſe, feeling or ſeeing? He was never able to imagine any lines beyond the

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any correct knowledge of them, since he could not apply it to the next coloured surface, whose form was exactly the same with that the outline of which the eye had just been taught to trace."

Case of John Salter, seven years old, couched by Horne (could distinguish colours before).

"The eye was allowed ten minutes to recover itself; a round piece of card of a yellow colour, one inch in diameter, was then placed about six inches from it. He said immediately that it was yellow, and on being asked its shape, said, 'Let me touch it and I will tell you.' Being told that he must not touch it, after looking for some time he said it was round. A square blue card, nearly the same size, being put before him, he said it was blue and round. A triangular piece he also called round. The different colours of the objects placed before him he instantly decided on with great correctness, *but had no idea of their form.*

"On the nineteenth the different coloured pieces of card were separately placed before his eyes, and so little had he gained in thirteen days, that he bounds he ſaw. The room he was in, he ſaid, he knew to be part of the houſe, yet he could not conceive that the whole houſe could look bigger. He ſaid every

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could not without counting their corners one by one tell their shape. This he did with great facility, running his eye quickly along the outline, so that it was evident he was still learning, just as a child learns to read."

The last operation to which I shall refer, is of a more recent date. It is recorded by Mr. Nunnely, who attests the accuracy of the details, which came within his personal observation. The boy, before couching, was in the habit of carefully feeling over the surface of objects and then applying them to his tongue; afterwards, he would hold them close to his eyelids and thus finally determine upon their nature. After the operation, "he could at once perceive a difference in their shapes. Though he could not in the least say which was the cube and which the sphere, he saw they were not of the same figure. It was not until they had many times been placed in his hands that he learnt to distinguish by the eye the one which he had just had in his hands from the other placed beside it. He gradually became more correct in his perception, but it was only after several days new object was a new delight, and the pleaſure was ſo great that he wanted ways to expreſs it.[86]' Thus, by fact and experiments thoſe points of the Theory which

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that he could or would tell us by the eyes alone which was the sphere and which the cube; when asked, he always, before answering, wished to take both into his hands. Even when this was allowed, when immediately afterwards the objects were placed before the eyes, he was not certain of the figure. Of distance he had not the least conception. He said everything touched his eyes, and walked most carefully about with his hands held up before him to prevent things hurting his eyes by touching them." See the "*Organs of Vision*," page 31 et seq.

It is much to be regretted that there are so few reliable cases of couching. The favourable opportunities for testing the validity of Berkeley's theories occur but seldom, and when they have presented themselves they have proved of comparatively little value, from the absence of judicious management on the part of the operators, who have certainly an apology in the words of Diderôt: "Préparer et interroger un aveugle-né n'eût point été une occupation indigne des talens réunis de Newton, Des Cartes, Locke et Leibnitz."—Ed.

[Philosophical Transactions, No.402]—Author. This is Berkeley's only allusion to
nous experiment of Cheselden, recorded in the Philosophical Transactions fo
28. This original record is given at full length in a supplementary note at
d of this volume (i.e. Fraser's edn of Berkeley's Works)

ſeem the moſt remote from common apprehenſions, were not a little confirmed many years after I had been led into the diſcovery of them by reaſoning.

FINIS.

APPENDIX.

A Letter from an anonymous Writer to the Author of the Minute Philosopher.

REVEREND SIR,

I HAVE read over your treatise called *Alciphron*, in which the Free-thinkers of the present age, in their various shifted tenets, are pleasantly, elegantly, and solidly confuted; the style is easy, the language plain, and the arguments are nervous; but upon the treatise annexed thereto, and upon that part where you seem to intimate that Vision is the sole language of God, I beg leave to make these few observations, and offer them to yours and your ready consideration.

I. Whatever it is without that is the cause of any idea within, I call the object of sense; the sensations arising from such objects I call ideas; the objects therefore that cause such sensations are without us, and the ideas within.

II. Had we but one sense, we might be apt to conclude that there were no objects at all without us, but that the whole scene of ideas which passed through the mind arose from its internal operations; but since the same object is the cause of ideas by different senses, thence we infer its existence; but though the object be one and the same, the ideas that it produces in different senses have no manner of similitude with one another. Because,

III. Whatever connexion there is betwixt the idea of one sense and the idea of another, produced by the same object, arises only from experience. To explain this a little familiarly, let us suppose a man to have such an exquisite sense of feeling given him, that he could perceive plainly and distinctly the inequality of the surface of two objects, which, by its reflecting and refracting the rays of light, produces the ideas of colours. At first, in the dark, though he plainly perceived a difference by his touch, yet he could not possibly tell which was red and which was white, whereas a little experience would make him feel a colour in the dark, as well as see it in the light.

IV. The same word in languages stands very often for the object without, and the ideas it produces within, in the several senses. When it stands for any object without, it is the representative of no manner of idea; neither can we possibly have any idea of what is solely without us. Because,

V. Ideas within have no other connexion with the objects without, than from the frame and make of our bodies, which is by the arbitrary appointment of God; and though we cannot well help imagining that the objects without are something like our ideas within, yet a new set of senses, or the alteration of the old ones, would soon convince us of our mistake, and though our ideas would then be never so different, yet the objects might be the same.

VI. However, in the present situation of affairs, there is an infallible certain connexion betwixt the idea and the object; and therefore, when an object produces an idea in one sense, we know, but from experience only, what idea it will produce in another sense.

VII. The alteration of an object may produce a different idea in one sense from what it did before, which may not be distinguished by another sense. But where the alteration occasions different ideas in different senses, we may from our infallible experience argue from the idea of one sense to that of the other; so that if a different idea arises in two senses from the alteration of an object, either in situation or distance, or any other way, when we have the idea in one sense, we know from use what idea the object so situated will produce in the other.

VIII. Hence as the operations of Nature are always regular and uniform, where the same alteration of the object occasions a smaller difference in the ideas of one sense, and a greater in the other, a curious observer may argue as well from exact observations, as if the difference in the ideas was equal; since experience plainly teaches us, that a just proportion is observed in the alteration of the ideas of each sense, from the alteration of the object. Within this sphere is confined all the judicious observations and knowledge of mankind. Now, from these observations, rightly understood and considered, your new Theory of Vision must in a great measure fall to the ground, and the laws of Optics will be found to stand upon the old unshaken bottom. But though our ideas of magnitude and distance in one sense are entirely different from our ideas of magnitude and distance in another, yet we may justly argue from one to the other, as they have one common cause without, of which, as without, we cannot possibly have the faintest idea. The ideas I have of distance and magnitude by feeling, are widely different from the ideas I have of them by seeing; but that something without, which is the cause of all the variety of all the ideas within in one sense, is the cause also of the variety in the other, and as they have a necessary connexion with it, we may justly demonstrate from our ideas of feeling of the same object what will be our ideas in seeing. And though to talk of seeing by tangible angles and tangible lines be, I agree with you, direct nonsense, yet to demonstrate from angles and lines in feeling, to the ideas in seeing that arise from the same common object, is very good sense, and so *vice versâ*. From these observations, thus hastily laid together, and a thorough digestion thereof, a great many useful corollaries in all philosophical disputes might be collected.

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